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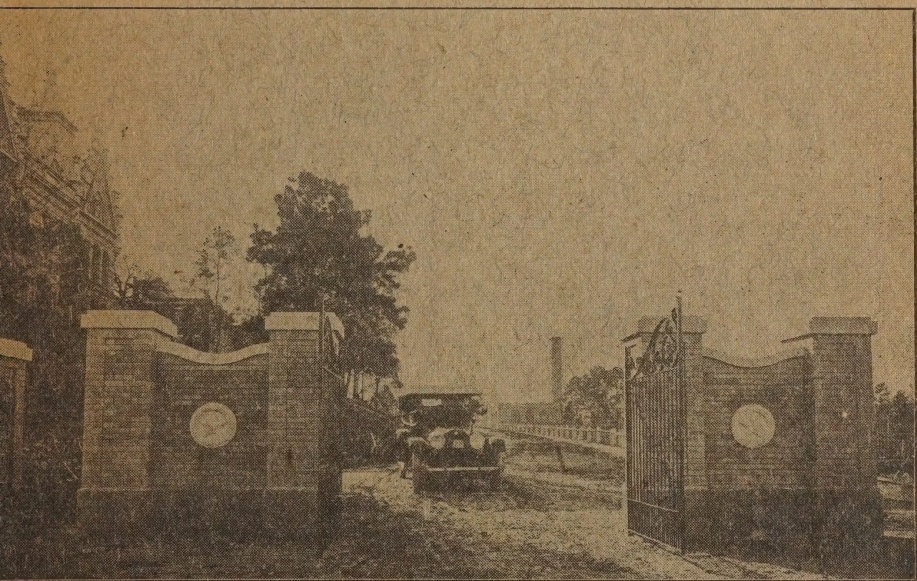
THE NORMAL BULLETIN

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APR 25 1921

Sam Houston Normal Institute
Texas State College for Teachers
Huntsville, Texas

VOCATIONAL AGRICULTURE NUMBER



Picture of West Entrance

Number 41

October, 1920

Entered at the Postoffice in Huntsville,
Texas, as second-class mail matter.

SUMMER SCHOOL OF 1921

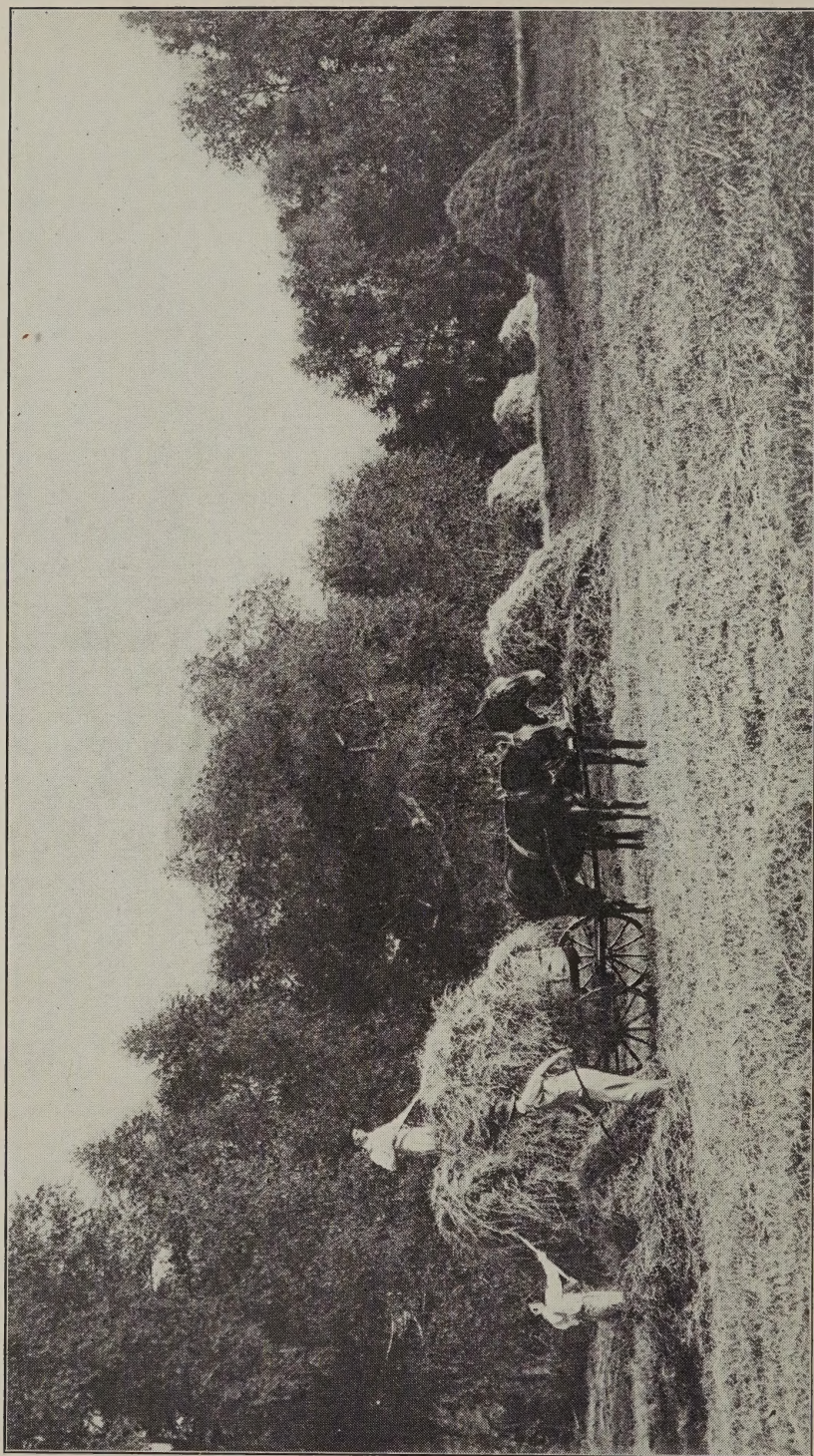
The Summer School of the Sam Houston Normal College is divided into two parts of six weeks each as follows:

First Part, from June 7 to July 16.

Second part, from July 18 to August 22.

During each of these terms of six weeks the schedule of work is so arranged as to enable students to complete three units each term—or six units during the Summer Session.

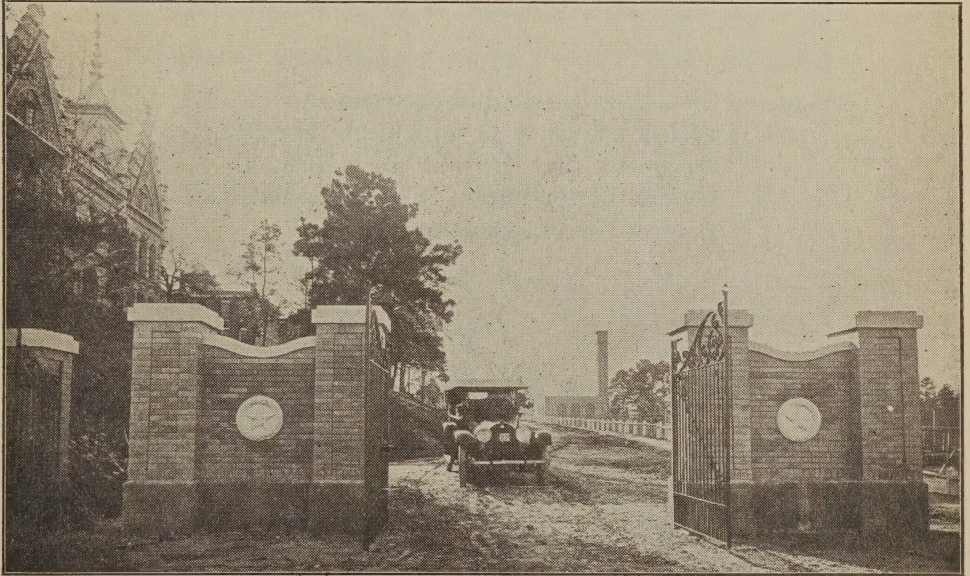
The Summer Normal opens June 13 and continues nine weeks, exclusive of examinations. In accordance with announcement of State Superintendent Miss Annie Webb Blanton, only one series of State examinations will be held. These are scheduled for the four days of August 8 to 11, inclusive.



Haytime on College Meadow.

THE NORMAL BULLETIN

SAM HOUSTON NORMAL INSTITUTE
A COLLEGE FOR TEACHERS
HUNTSVILLE, TEXAS



Picture of West Entrance

VOCATIONAL AGRICULTURE NUMBER

WITH ANNOUNCEMENTS

November, 1920

Issued Quarterly

No. 41

“Agricultural education seeks to establish a permanent agriculture and it recognizes that the first essential of a permanent agriculture is an intelligent, progressive and contented people.”

SAM HOUSTON NORMAL INSTITUTE

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A. B., Ripon College, Ripon, Wisconsin; M. S. in Agriculture, University of Wisconsin; Instructor in Science in High School; Instructor in Agriculture, Walsh County Agricultural and Training School, Park River, North Dakota; engaged in farming Park River, North Dakota.

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B. S., Peabody College for Teachers; graduate Sam Houston Normal; teacher, principal, superintendent, rural and city schools.

J. McCULLOUGH **Farm Assistant**

FOREWORD

The Sam Houston State Normal College in order to meet the needs of the teachers in the rural schools began teaching elementary agriculture in 1902. A large proportion of the attendance of the Normal comes from rural districts and small towns, and many of the students return to these sections to teach.

In 1909 the State Legislature made a special appropriation for the teaching of agriculture in the Normal Colleges and a department of agriculture was established in this institution during that year. Short courses were offered those teachers preparing to teach other common school subjects and about thirty term hours in general elementary agriculture for those planning to teach some agriculture in the rural schools. Together with these courses strong courses in rural education, related science, English and history were given.

In 1920 the State Legislature made special appropriation for teacher training in Vocational Agriculture in the Sam Houston State Normal College.

TEACHER TRAINING IN VOCATIONAL AGRICULTURE.

The Sam Houston State Normal College has been designated by the State Vocational Board to train teachers to teach Vocational Agriculture in the high schools upon meeting certain standards set up by the State Vocational Board for the training of teachers in this work.

Following this action of the State Vocational Board the Texas Legislature made special appropriation enabling the Sam Houston State Normal College, Department of Agriculture, to purchase additional equipment in laboratory material, live stock, farm equipment and to employ additional specialist in agriculture to carry on the teacher training in Vocational Agriculture.

Prior to this designation by the State Vocational Board the Sam Houston Normal College required four years of college work, or 180 term hours for graduation, and conferred the degrees of Bachelor of Science and Bachelor of Arts in Education. In Bulletin 27 of the year 1919 of the Federal Vocational Board the statement is made that this length of course is desirable for teachers of Vocational Agriculture, accompanied by practical farm experience: "Graduation from a four-year college course in agriculture in which suitable provision is made for agriculture, science, humanistic, professional studies and training should be the standard accepted at the present time. The minimum during the present time of inadequate supply of trained teachers should be practical experience, at least two years of college instruction in agricultural subjects, and some degree of professional training."

The Federal Vocational Board suggests the following approximate division of time of prospective agriculture teachers during the four years' college work. Practical farm experience, though required, is not here indicated:

38% of courses offered to be agricultural studies

28% of courses offered to be science studies

20% of courses offered to be humanistic studies

14% of courses offered to be professional work.

The aim of the required farm experience is two-fold:

- (a) To give teacher a certain degree of judgment and skill in the vocation which he is to teach, and
- (b) To weave into his knowledge of agriculture a sympathetic un-academic rural viewpoint.

Of the total amount of subject matter, including agricultural studies suggested by the Federal Vocational Board for teachers of Vocational Agriculture for high schools, the Sam Houston Normal College has been offering for several years seventy-eight per cent. Practically all of the sciences, humanistic studies and professional work have been given. When this institution was designated by the State Vocational Board this year to train teachers of Vocational Agriculture for the high schools, and after the Legislature made special appropriation to carry on this work as recommended by the State Normal College Board and State Vocational Board, changes in courses were made and new courses offered. The changes necessary to enable this college, already engaged in the special training of teachers for the public schools of Texas, to train teachers of Vocational Agriculture have been

made with relatively small increased expense to the State. A thorough course in agriculture and related subjects is given all teachers preparing to teach Vocational Agriculture in the high schools, and short courses in agriculture, which are absolutely essential for successful teaching in the rural schools, are offered teachers preparing to teach other subjects below the high school.

THE DEMAND FOR VOCATIONAL TEACHERS.

"Two factors are creating a greatly increased demand for secondary teachers of agriculture:

(1) The great interest in Vocational Education in high schools within recent years, due to the evident need and insistent demand for such instruction; and

(2) The increased interest in and development of Vocational Education in high schools which is resulting from the passage of the Act providing Federal aid for Vocational Education in schools below college grade.

In order to supply the demand the capacity of existing agencies for the training of vocational teachers must be expanded or new agencies created. A continuous, adequate supply of properly trained vocational teachers is imperative for the success of the well formulated progress of Vocational Education which the passage of the Smith-Hughes Act insures ultimately in every State.

Standards for vocational teacher training work should be improved. Future teachers of vocational subjects must have more extended and specialized training for their work than has been usual in the past if they are to meet successfully the rising standards set for secondary vocational work."

FEDERAL VOCATIONAL BOARD.

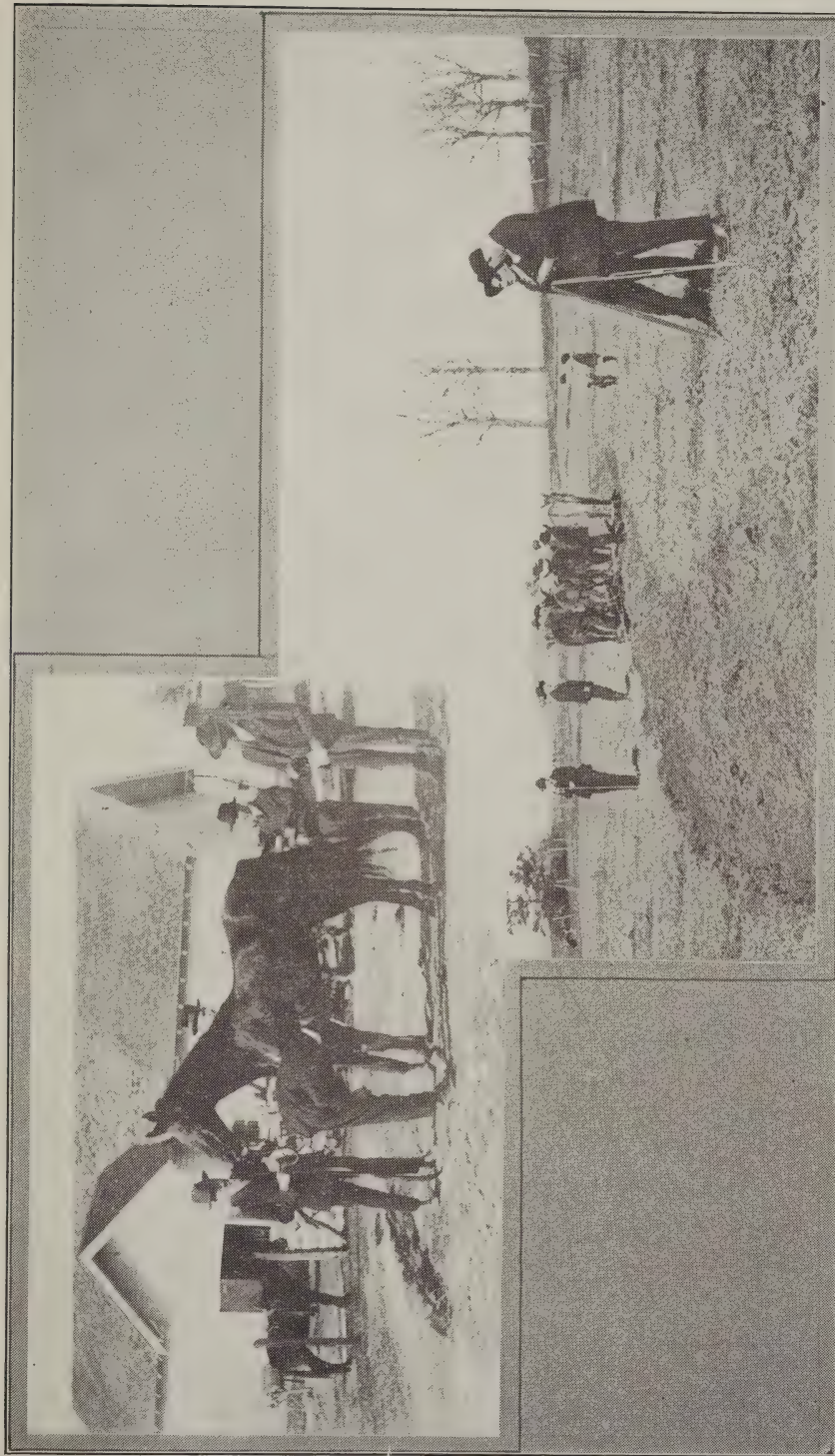
VOCATIONAL EDUCATION, OR SMITH-HUGHES ACT

The Smith-Hughes Act was approved by Congress February 23, 1917.—"An Act to provide for the promotion of Vocational Education. To provide for co-operation with the States in promotion of such education in agriculture, trades and industries and home economics subjects; to provide for co-operation with the States in preparation of teachers of vocational subjects, and to appropriate money and regulate its expenditure."

The act provides annual grants by the Federal Government for Vocational Agricultural Education for fiscal year ending June 30th:

AGRICULTURE: FOR SALARIES OF TEACHERS, SUPERVISORS AND DIRECTORS.

	Total	Total	Allotted on basis of rural population.	Additional to provide minimum allotments to States.
1921-23 -----	\$ 4,329,000	\$ 1,514,000	\$ 1,500,000	\$ 14,000
1925-26 and annually thereafter---	7,367,000	3,367,000	3,000,000	27,000



Students Scoring Thoroughbred Saddle Horse.

Terracing Lesson With Students in Vocational Agriculture.

Communities, superintendents, teachers and school boards of Texas desiring information about the provisions of this law should address the State Vocational Board, care State Department of Education, Austin, Texas, or for particular information address the particular department interested as reported in this bulletin.

"In Texas during the year 1917-18 vocational departments were established as follows: Agriculture, 16; trades and industries, day vocational schools 2, evening classes 8; home economics, two day schools for whites, one day school for negroes, and four evening classes.

Federal funds, to be matched by State funds, were available as follows:

For salaries of teachers, supervisors, or directors of agricultural subjects	\$29,974.72
For salaries of teachers of trade, home economics, and industrial subjects	11,974.72
For teacher-training and state supervision	21,259.77

During 1919-20 the number of schools had increased to 76 in Vocational Agriculture; 48 evening classes in six different centers and seven all-day trade schools in seven centers satisfactorily completed their programs in trade and industrial work. Twenty-nine day schools and ten evening classes in three centers completed work in vocational home economics.

The number of institutions doing teacher training work had increased to include the normal schools of the State. The available Federal funds for the year were as follows:

For salaries of teachers, supervisors, or directors of agricultural subjects	\$59,949.44
For salaries of teachers of trade, home economics, and industrial subjects	22,181.43
For teacher-training and state supervision	38,267.59

The following apportionment of Federal funds has been made for Texas 1920-21:

Federal fund for agriculture	\$74,936.80
Federal fund for trade, home economics, and industry	27,726.77
Federal fund for teacher-training	42,519.54

C. L. DAVIS, *State Director, Agricultural Education.*"

THE AGRICULTURAL EQUIPMENT OF THE SAM HOUSTON NORMAL

The Department of Agriculture, including lecture rooms, laboratories, reference libraries and offices, is located in the Agriculture Building. The lecture rooms are fitted up with tables, arm chairs, electric and gas fixtures for use of slides and motion pictures, also blackboards, maps and other illustrative material. There are seven well-equipped laboratories for work in soils, dairying, bacteriology, chemistry, physics, economic entomology and biology. The entomological, biological, physical and chemical laboratories are located in the Science Building. The reference library has a complete assortment of books on agriculture and rural life which have been carefully selected over a period of ten years. There are thirty cases of books in this library in addition to the text-books on agriculture which are filed in the text-book library and which are furnished free to students in the Department of Agriculture. The offices for the men in the Department of Agriculture are conveniently located for student conferences and their other work in the Agricultural building. The farm of over 100 acres consists of land owned or rented by the State. On this land are located the barns, machinery building, poultry houses, hog houses and other buildings. The dairy barn has just been enlarged and equipped with modern equipment. There are several types and breeds of cattle, hogs, poultry and other animals. Such other types and breeds as needed by the Department of Vocational Agriculture not included here will be purchased as demands arise. In addition to the present equipment in buildings, live stock and farm machinery, students are using equipment on two large State farms within ten minutes' ride by automobile from the college on the good roads. The greenhouse, orchard, of large and small fruits, and vegetable gardens are located on the State land just across the street from the college campus. This equipment, in addition to such equipment on the State farms and the private farms nearby, furnishes abundance of material for the classes in horticulture. The farm equipment also includes a Ford automobile, used in transporting practice teaching students to the Smith-Hughes rural schools and for students in the study of farm equipment, live stock and farm management problems in the vicinity.

EXTENSION WORK.

The rural village and city schools are frequently calling upon the Sam Houston State Normal College for assistance in working out problems that are constantly arising within these schools. Professors from the various departments are responding to these calls from time to time all through the year. These calls cover various activities in the public schools from the kindergarten and primary departments through high school. Frequently these calls include the making of teachers' institute programs and conducting the institute, also special day programs and supervision of instruction and demonstration of these grades and phases of work in the public schools. The Sam Houston Normal College feels that one of its special functions is to advise the teachers in service in every way possible.

RURAL LIFE CONFERENCES AT SAM HOUSTON NORMAL INSTITUTE

For the past several years a Rural Life Conference has been held during the month of April at the Sam Houston Normal Institute. The addresses, discussions and proceedings of these Conferences have been of special interest and value to teachers of vocational agriculture and to other citizens interested in the improvement of rural life conditions.

Following is a copy of the Rural Life Conference held in the spring of 1920:

Theme: The County Unit Plan for Education.

MONDAY, MORNING SESSION, 9:00 A. M.

- I. The organization and co-ordination of educational agencies of the county, school board, superintendents, principals, teachers. Their functions and relationship, qualifications, manner of selection, tenure.—Mr. J. M. Foote, State Rural School Supervisor of Louisiana.
- II. *Supervision Under the County Plan.*
 - (1) Its Possibilities—
 - (2) The Use of Standard Test and Measurement—Dr. Shelton Phelps, Peabody College for Teachers, Nashville, Tennessee.
 - (3) Building Professional Insight and Spirit Among Teachers—Superintendent P. W. Horn.
 - (4) Standards for Judging What to Teach and How to Teach—Dr. Joseph Roemer.

LUNCHEON AND SOCIAL HOUR, 12:00—1:00.

Speaker: Superintendent P. W. Horn, Houston, Texas.

AFTERNOON SESSION, 1:00 P. M.

Demonstration in Public School music by S. H. N. I. students—Miss Elizabeth Meachum, director.

- III. The School Boards, Local and County—Mr. J. M. Foote.
 - (1) Functions.
 - (2) Legal status.

- IV. *Problems of the Teacher.*

In the Organization of Subjects and Activities—Prof. M. F. Hayes, College Station, Texas.

- (1) Co-ordination of Subject Matter. General Discussion.
- (2) Teaching Through Projects. General Discussion.

Section meetings, 3:30-5:30 P. M.

- V. County Superintendents' Section, Director, Supt. H. C. Powell, Meridian, Texas.
 Rural Teachers' Section, Director, Mrs. H. H. Markley, Chicago, Illinois.
 County Demonstration Agents' Section—Mr. T. O. Walton, State Director, College Station, Texas.

EVENING SESSION, 7:30 P. M.

Music—Sam Houston Normal Institute Orchestra, Director, Mr. W. R. Faifer.

Address, The Community Center—Dr. H. E. Jackson, Washington, D. C.

TUESDAY, MORNING SESSION, 8:30 A. M.

- VI. *The function of county educational agencies in relation to:*
 (1) The Public Health—Dr. Carl Hartman, Austin, Texas.
 (2) The Rural Church—Dr. H. E. Jackson, Washington, D. C.
 Special music, Miss Elizabeth Meachum, Director.
 (3) The Demonstration Agents—Mr. T. O. Walton, College Station, Texas.
 (4) Community Life—Dr. H. E. Jackson.
- VII. The County Survey and the Teacher as a Social Factor—Mr. F. A. Merrill, Washington, D. C.

LUNCHEON AND SOCIAL HOUR, 12:00-1:00.

Speaker: Mr. F. A. Merrill.

- VIII. The equalization of educational opportunities appropriate to a democracy—Dr. Shelton Phelps, Nashville, Tennessee.
- IX. Needed revision in the curricula of negro schools—Mr. L. W. Rogers, State Supervisor.
- X. Teacher training in approved high schools for the preparation of teachers in elementary schools as a means of meeting present shortage—Mr. M. H. Harper.

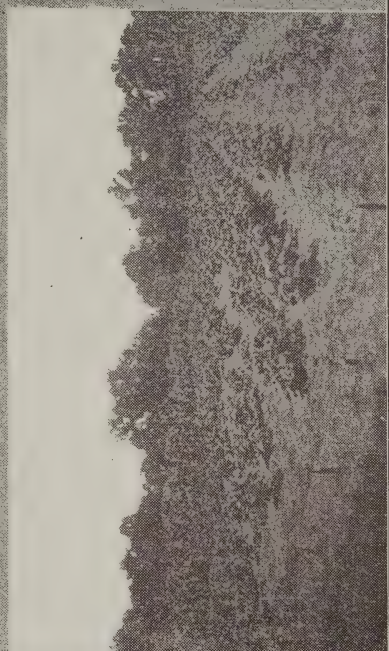
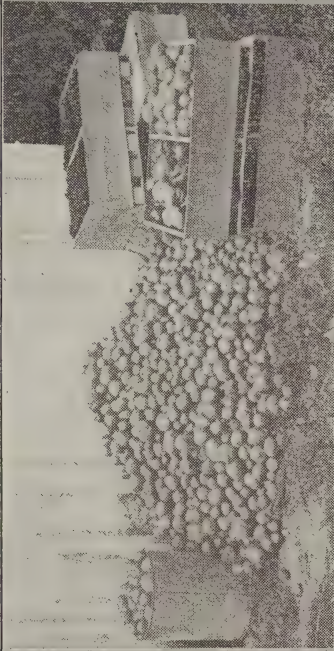
Reports of Committees.

TUESDAY EVENING SESSION, 7:30 P. M.

- S. H. N. I. Glee Club, Girls' Chorus and Male Quartet—Miss Elizabeth Meachum, Director.
- Texas Program for Improvement of Rural Schools and Rural Life
 The Challenge of the Rural School Under the County Unit Plan—
 President H. F. Estill.
- A Play, "Back to the Farm"—By Merlin H. Shumway, University of Minnesota, presented by the students of Sam Houston State Normal College.



Agriculture Building.
Oats and Vetch on College Farm.



Berries, Potatoes, and Tomatoes, from College Farm.
Variety Test of Cotton and Corn on College Farm.

Motion pictures showing rural school and other rural improvements in various sections of the United States.

Supervised study demonstration in public school music and other activities may be observed in S. H. N. I. Training School Tuesday forenoon.

The Third Annual Rural Life Conference will be held at Sam Houston State Normal College in co-operation with the United States Department of Education and State Department of Education April 24, 25 and 26, 1921.

LOCAL ENVIRONMENT AT SAM HOUSTON NORMAL.

Huntsville, the seat of the Sam Houston Normal Institute, is an ideal school town of about 4600 inhabitants. It is a town of Christian homes and contains churches of the leading denominations. Students coming to Huntsville are sure of a cordial welcome from her citizens.

Through the generosity of successive Legislatures of the State of Texas the institution has been provided with most excellent and modern physical equipment. Its faculty is composed of instructors of wide experience and training who are experts in their respective fields.

No school in the State throws around its students a better moral influence. The best young people come here to prepare themselves to teach. Members of the faculty are men and women of positive religious life and influence. Through personal contact by the students with these instructors and through opportunities afforded the students by a form of self-government in operation at the school, conditions are highly conducive to the development of men and women of strong character.

Through its forty years of history a wholesome atmosphere—a spirit conducive to studious habits—has grown up and permeates the entire institution. The young person is fortunate who finds himself a member of its student body.

EXPENSES.

Incidental Fee.—Each student is required to pay at the time of enrollment an incidental fee of \$15. An additional blanket tax fee of \$5.00, paid by all students, gives free admission to Lyceum lectures and entertainments and to athletic contests. *There is no charge for tuition.*

There is no book fee. All text-books are loaned to students free of charge. At the end of the year, if the books are returned in good condition, \$2 of the incidental fee is returned. Any books lost or injured are paid for by the student to whom they were issued. All books are thus free for the use of students.

There is no deduction for late entrance, save that students entering after the close of the second term pay \$10 instead of \$15.

Laboratory Deposit Fee.—Each student registering in certain laboratory courses will deposit a breakage fee of \$2, to be refunded if apparatus is not damaged.

Board.—The Normal has no dormitories. A modern cafeteria has

been opened in connection with the school where wholesome meals may be obtained at actual cost of food and labor. Students desiring board and room at private houses may find comfortable accommodations within easy reach of the Normal buildings. Thirty dollars per month for board and lodging (two in a room) is the prevailing rate. This includes fuel and lights. Occasionally a lower rate—particularly for young men—is obtainable. The total cost of board for the session ranges from \$200 to \$275.

Sundry Expenses.—These include laundry, stationery and other incidental expenses, and usually amount to from \$30 to \$50 per session.

Total Expenses.—The entire expense for a student need not exceed \$325 to \$400. Some find it possible to reduce this total; others choose to spend more. This estimate does not include outlays for traveling, clothing or other expenses of like character. Under no circumstances can fees be refunded.

TEACHERS' POSITIONS.

During the present crisis in the teaching profession the Sam Houston Normal has been able, through its standing committee on Teachers' Positions, to render valuable assistance both to Boards of Education desiring to employ teachers and to teachers desiring positions. This committee functions throughout the year, rendering service without charge.

SUMMER SESSION AND SUMMER NORMAL.

A Summer Normal is held every year in the buildings of the Sam Houston Normal, offering the advantage of the libraries, buildings and apparatus to the teachers of Texas. The 1921 Summer Session begins June 7, the Summer Normal, June 13. At the close of the Summer Normal, examinations are held for Summer Normal certificates, just as at other Summer Normal Institutes elsewhere in the State. In 1921 these State Examinations will be held August 8-11.

In connection with the Summer Normal a twelve weeks' summer term of the Sam Houston Normal is conducted by the regular faculty of the school. Students attending the summer term will be credited for work completed as if done in the regular session.

1. Former students of the Sam Houston Normal may make up deficiencies and also receive credit for additional work satisfactorily completed in the summer term.

2. Persons contemplating entering the regular session of the Normal will find it an advantage to complete several summer courses, thereby to lighten the succeeding year's work. One such summer's work may enable the new student to remove entrance conditions.

3. Persons with the requisite qualifications who find it impossible to attend the regular session may secure a first grade Normal School certificate by earnest work in three summer terms. The courses will be so arranged as to make this possible. To accomplish it, thorough preparation is necessary as well as diligent study.

4. In like manner, a person eligible to admission into the College Sophomore class may secure a diploma (equivalent to a permanent certificate) by attendance upon three summer terms.

5. Persons who have completed four college courses at a recognized college may receive a first grade certificate in one term on completion of three units in education.

6. The Sam Houston Normal Institute will keep a record of the courses completed by its summer students. Persons who attend the Summer School merely for the sake of self-improvement, and not for credit or examination, receive a statement of the courses completed here.

7. The Summer School in 1921 will consist of two terms of six weeks each. Students may register for not more than three units during each of these six weeks terms.

The 1921 Summer Session will open Monday, June 7.

Special Summer School bulletin will be issued about February 1st. Write Secretary Sam Houston Normal for a copy.

ENTRANCE REQUIREMENTS TO CREDIT CLASSES.

Entrance to any class may be effected by examination or by presentation of credentials, as indicated below:

NORMAL SCHOOL DIVISION.

First Year Class. Completion of ninth grade of an approved high school exempts from entrance examinations to First Year Normal School class. A second grade State certificate exempts from entrance examinations, except in algebra and composition.

Second Year Class. Completion of the tenth grade of a high school of first or second class gives full admission to Second Year Normal School class; completion of eleventh grade of high school of a third class and one term first year work gives admission to the second year. A State first grade certificate admits to the second year.

NORMAL COLLEGE DIVISION.

Freshman Class. Graduates of first class high schools will be given full admission to freshman class, provided the student presents on the uniform entrance certificate a statement from the superintendent or principal showing the completion of 15 affiliated units. If the number of units presented is less than 15 units the deficiency must be made up by examination or class work.

Sophomore Class. Applicants for admission to the sophomore class must have full college entrance and must have completed the equivalent of one year of college work in a normal school or recognized college or university.

Junior Class. Texas State Normal graduates holding the four-year diploma and students who have completed the equivalent of two years in a recognized college are admitted to the junior class.

Senior Class. Students who have completed at least three years of college work, including eighteen term hours in education, are admitted to the senior class.

For entrance to a particular class in Vocational Agriculture the student must have completed the work scheduled for previous years as herein provided, or its equivalent.

CERTIFICATES, DIPLOMAS AND DEGREES.

Completion of the work of the various years leads to recognition as follows: First Year Normal School, second grade Normal certificate, valid for four years; Second Year Normal School, first grade Normal certificate, valid for six years; Freshman, first grade Normal certificate, valid for seven years; Sophomore, diploma and permanent certificate. Completion of the Junior and Senior years leads to the degree of B. A. in Education or B. S. in Education.

COURSE OF STUDY IN VOCATIONAL AGRICULTURE.

Freshman Year.

Cs.No.	Fall	Tm.Hrs.	Cs.No.	Winter	Tm.Hrs.	Cs.No.	Spring	Tm.Hrs.
3180	Field Crops	...3	3181	Field Crops	...3	3182	Fld. Cps.	...3
3183	Horticulture	...3	3184	Horticulture	...3	3185	Horticulture	...3
	English	...3	314	English	...3	318	English	...3
313	English	...3	3187	Poultry & Bee	...3	202	Rural Educ.	...3
3188	Farm Shop	...3		Keeping	...3	3280	Farm Eng'ing	...3
			3189	Farm Mechan-	...3			
				ics	...3			

Sophomore Year.

487	Chemistry	...3	488	Chemistry	...3	489	Chemistry	...3
4182	An. Husbandry	...3	4183	An. Husbandry	...3	4184	An. Hus.	...3
419	English	...3	513	English	...3	514	English	...3
3150	Geography	...3	3151	Geography	...3	404	Ed. Psychology	...3
4188	Dairying	...3	4189	Dairying	...3	4280	Feeds & Feed-	...3
							ing	...3

Junior Year.

5186	Agric. Chem.	...3	5187	Agric. Chem.	...3	5788	Agric. Chem.	...3
480	Farm Manage-	...3	685	Farm Manage-	...3	5189	Ec. Entomology	...3
	ment	...3		ment	...3	5282	Ec. Botany	...3
5280	Econ. Botany	...3	5281	Economic Bot-	...3	533	History	...3
435	History	...3		any	...3	5285	Agric. Ed.	...3
5283	Agric. Educa-	...3	530	History	...3			
	tion	...3	5284	Agric. Ed.	...3			

Senior Year.

680	Ag. Journalism	...3	682	Genetics, An. Br.	...3	681	Vet. Science	...3
432	Rural Sociology	...3	433	Rural Sociology	...3	504	Rural Organ.	...3
683	Genetics, Pt. Br.	...3	4180	Field Crops	...3	4181	Field Crops	...3
686	Soils & Fert.	...3	687	Soils & Fert.	...3	688	Agr. Bacteri-	...3
6180	Agric. Educa-	...3	6181	Agric. Ed.	...3		ology	...3
	tion	...3				6182	Agr. Education	...3

DESCRIPTION OF COURSES.

3180. *Field Crops.* Sugar, fiber and root crops. Sugar beets, cane, cotton and potatoes, as the most important member of the groups, are studied in detail. Will include also the crops of less importance, sorghum, flax, hemp, etc. Lectures, recitations and laboratory work.

3181. *Field Crops.* Forage crops. A thorough study of crops valuable as forage in the United States, with special emphasis upon those used in the South. Study includes culture, uses and identification of both plants and their seeds. Lectures, recitations and laboratory work. Text: "Forage Plants" by Piper.

3182. *Field Crops.* A continuation of 3181.

4180. *Field Crops.* Cereals. Detailed study of all the important cereal crops—culture, uses, varieties, judging and marketing of the grains. Lectures, recitations and laboratory work.

4181. *Field Crops.* A continuation of 4180.



Tractor Demonstration.
Class in Vocational Agriculture.
Clines' Prairie School, eight miles from the College.

Teacherage—Home of Prof. J. L. Lester
Community Fair.
used as one of the demonstration schools.

683. *Plant Breeding*. Takes up theoretical study of heredity and origin of species in plants, followed by practical breeding methods applied in developing better strains of our important crops—corn, oats, potatoes, cotton, etc. Lectures, recitations and library assignments, with practical exercises where possible. Text: "Plant Breeding" by Bailey and Gilbert.

680. *Agricultural Journalism*. Some study will be made of different types of journalism appearing in current periodicals, but most emphasis placed on production of original articles on agricultural subjects by the class. Usually one article a week will be prepared and submitted to publishers of periodicals for publication.

4182. *Animal Husbandry*. Types, breeds and judging of live stock. Teaches adaptation of different breeds to different conditions and aims to familiarize the student with as many breeds as possible. We have some excellent dairy cows and swine on the school farm and other stock will be added later. All these animals and others in town and on surrounding farms are available for first hand study. Liberal use is made of them in giving practice in live stock judging. Lectures, recitations and field trips. Text: "Types and Breeds" by Plumb.

4183. *Animal Husbandry*. Care and management of live stock. This course is devoted to a study of flock and herd management—development of young animals, care of work stock, breeding animals and dairy cows, sanitation and marketing, with brief discussions of breeding and feeding problems. Practice in judging continued. Recitations and lectures.

4184. *Animal Husbandry*. Continuation of 4183. Demonstrations on practical problems in the handling and management of live stock on the farm with recitations and lectures.

681. *Veterinary Science*. Anatomy of farm animals, their unsoundness and diseases—causes, prevention and remedies. Special attention given to prevention and control of contagious diseases. Recitations, lectures, demonstrations and laboratory work.

682. *Animal Breeding*. A study of the principles and practices involved in the improvement of farm animals. Reproduction, heredity, variation, selection, line-breeding, inbreeding, cross-breeding and their application in practice. Class assists in marking, selecting, naming and registering animals owned by the school.

3186-3187. *Poultry*. Types and breeds of poultry, poultry house construction, incubating, brooding, yarding, and special emphasis will be given to care of baby chicks; insects and diseases and their control. Practical project work in caring for the school flock will be done by each member of the class.

4280. *Animal Feeding*. Composition and feeding value of feed-stuffs; digestion; absorption; assimilation and metabolism; feed requirements and calculation of balanced rations for farm animals. Feeding projects with school animals will be assigned each student.

4188-4189. *Dairying*. Study of breeds, the secretion and composition of milk; exercises in milk testing, construction and operation of various makes of cream separators, methods of cream ripening, and the making of butter and cheese. Students will assist in caring for the school herd of ten cows as part of the practice work of this course.

5280-5281-5282. *Economic Botany*. Practical studies in Morphology and Physiology for half the year and the remainder given to diseases of farm crops and their control. All phases of the subject are considered from the agriculturist's point of view.

688. *Agricultural Bacteriology*. A study of bacterial life with special reference to soil fertility, dairy production, common diseases, etc., which are of vital concern to the agriculturist.

3183. *Horticulture. Productive Orcharding*. This course embraces a study of the general practices of good orcharding. The propagation and care of orchard trees. The harvesting, marketing and storing of orchard products. The practical laboratory work consists of budding, grafting, pruning and planting of the fruit and nut trees, with special stress upon Texas conditions.

3184. *Horticulture. Small Fruit Production*. A systematic study of the bush fruits and berries. Crops of this nature that have both actual and potential value in Texas. Their propagation, cultivation and marketing. Two recitation and one laboratory period per week.

3185. *Horticulture. General Vegetable Gardening*. A general study of the principles of vegetable gardening designed to give a comprehensive knowledge of the industry. This course is intended for the general agricultural student for use in home or market gardening. Lectures and laboratories consider the origin, economic importance, the cultural requirements, marketing, storage and uses of the important vegetables of the South.

487-488-489. *Elementary Chemistry*. Two recitation and two laboratory periods per week. An elementary course in general chemistry dealing with fundamental principles, laws and phenomena of the science. Study of the various elements; their occurrence, properties and uses. This course, or its equivalent, is a prerequisite for courses 5186, 5187, 5188, 686 and 687. Special attention will be given to those elements of agricultural importance. Text: *Inorganic Chemistry for Colleges*. Newell.

5186, 5187, 5188. *General Agricultural Chemistry*. A study of the science of chemistry in its relation to plant and animal life and an introduction and general study of the chemical composition and properties of plants, soils, fertilizers, feed stuffs, insecticides and fungicides. Texts: *Quantitative Analysis*, Lincoln & Walton, *Principles of Agricultural Chemistry*, Fraps, and *Methods of Association of Official Agricultural Chemists*.

5189. *General Economic Entomology*. This course consists of two recitation and lecture periods and two laboratory periods per week, composing a study of life history and habits of insects injurious on the farm in Texas and Southern States, with special consideration of the most approved methods of control. The laboratory work includes study of insects and their ravages and control measures used in the field.

686. *Soils and Fertilizers*. Chemistry courses 487, 488 and 489 or their equivalents are prerequisites to this course. A course dealing with the origin, composition and properties of soils with special stress upon the soils of Texas. The laboratory work is destined to illustrate fundamental physical and chemical relations in the fertilization and cultivation methods used in farming. The main soil-forming minerals

and their constituent elements, as found in this region, will be studied in connection with the soils derived from them.

687. *Principles and Practices of Soil Management*. Prerequisites: Chemistry 487, 488, 489 and 686 or equivalent. This course deals with methods of soil utilization, including the use of rotations, manures, commercial fertilizers and green manures in their relation to soil fertility and good agricultural practices. It includes a study of the productivity of soils under various practices as shown by reports of field experiment from the various experiment stations. Special stress is placed upon the factors essential to the practical utilization of the soils of Texas.

3188. *Farm Shop*. The purpose of this course is to give the student practice in the proper use of hand tools, to develop an understanding of the methods of good construction and to develop the ability to plan and construct useful articles for which there is a felt need.

The work will consist of some new construction work in wood, iron and concrete, as well as repair work in wood, iron, concrete and leather.

3189. *Farm Mechanics*. This course is an extension of farm shop work with the emphasis on the study and repair of the various farm machines, such as windmills, pumps, planting machines, harvesting machines, stationary engines, tractors, etc.

3280. *Farm Engineering*.

202. *Rural Education*. This course is for leaders in rural education, for those who teach or supervise rural schools—one-room schools, consolidated schools and rural town schools. Among the problems considered are: Better organization, supervision and teaching, through the county unit and consolidation; efficient buildings and equipment; the teacher and his functions; the supervisor and his work, etc.

404. *Advanced Educational Psychology—Experimental*. The work of this course will be largely experimental. The learning process will be studied from the standpoint of situation and response. The topics of situation and response, individual differences, grading of pupils, the retarded and accelerated pupils, etc., will be studied experimentally and constant use will be made of the Training School for demonstration purposes in order that the work may be made as practical as possible for prospective teachers and supervisors.

407. *Principles of Education*. (Prerequisite or parallel to 408.) This course is a study of the problems of curricula and methods, with principal reference to education in the elementary school period and in the junior high school period. The work is organized to meet the needs of administrators, supervisors and teachers. Analysis is made of subject-matter and method in relation to the sociological and psychological facts that determine the principles of education.

Observation, readings, special problems, reports and discussions.

3150. *College Geography*. An intensive study of weather and weather observations; elements of climate and climatic regions; land forms and the processes by which they were made and changed; rock materials of the lands; soils and soil formation; the influence of these factors on social and economic conditions and the distribution of peoples.

3151. *Geography of the South*. A study of position and coast-

line, geologic history, climate, surface, soil drainage and natural resources; the influence of these factors upon the social and economic conditions and the commercial activities of the people of the South. Special attention to Texas and to type areas of the physiographic regions of the South. Use of topographic maps and coast charts to give concreteness to the work.

435. *Economic History of the United States.* Brief attention will be given to the development of industries in the American colonies, to economic factors in the American Revolution, the development of the West, the transformation of industrial conditions in the United States, internal improvements, the tariff, slavery. Special attention will be given to the effects of the War Between the States upon our economic history, and a study will be made of the effects on our economic life of our participation in the World War. Liberal use will be made of current publications, reports, etc.

530. *Twentieth Century History.* Attention will be given to pre-war industrial and governmental conditions in Europe and America. Special emphasis will be placed on the social, economic and political effects of the World War. A careful study of the history of our own country since the War Between the States will be made, with special reference to our participation in the World War. The Monroe Doctrine, our Foreign Policy, the League of Nations will receive study.

533. *Government.* This course is designed for students majoring in Social Science and other students interested in the operation of political systems.

432. *Rural Sociology.* The social factors affecting country life; rural co-operative organizations; movements for the improvement of rural life. Basal text: Gillette's Rural Sociology.

433. Continuation of 432.

6180. *Agricultural Education.* The organization and administration of Vocational Agriculture in the high school and practice teaching—records and reports of teachers and students as required in best high schools in Vocational Agriculture.

6181. *Agricultural Education.* The curriculum, supervised study, high school surveys in the vocational high schools in agriculture, practice teaching, short courses and evening schools.

6182. *Agricultural Education.* Form of extension work as carried on in the best secondary schools in Vocational Agriculture, community surveys, fairs and special programs, projects, making and using charts, slides and other illustrative material, bulletins, motion pictures, club work and practice teaching.

5283. *Agricultural Education.* History of Vocational and Industrial Education, Vocational Guidance and Agricultural Education, the significance of Vocational Education.

5284. *Agricultural Education.* Special methods in teaching Field Crops, Horticulture and Animal Husbandry in the high school. Also cataloguing and filing materials.

3108. *Principles of Teaching in Secondary Schools.* This course is a study of the problems of secondary education in relation to the following: (1) Adapting content and methods to social needs. (2) Basing methods of teaching on sound psychological principles. (3) Applying principles of scientific business management to the conduct of teaching.

480. *Farm Management.*

685. *Farm Management and Farm Accounting.*

313. *English Composition.* Blaisdell's Composition-Rhetoric, Chapters I-XIV and XX. This course is devoted especially to the development of the essay. Parallel reading and study of selected essays from Addison, Lamb, Macaulay, Stevenson, Irving's Life of Goldsmith, The Deserted Village, She Stoops to Conquer.

314. *English Composition.* Blaisdell's Composition-Rhetoric, Chapters XIV-XIX and XXI-XXIV. This course develops especially the short story. Constant parallel reading of selected short stories and, later, of selected verse with a short study of the mechanics of English verse.

318. *Outline History of English Literature.* Lectures and library readings on the various periods, supplemented by the class study of such major works as Beowulf, Chaucer's Prologue, Macbeth and The Idylls of the King. Much reference work in the library.

419. *Contemporary Literature.* Lectures on modern tendencies in literature and on the development of modern forms. Wide reading of American and English authors, as also of good translations of the works of present day authors in other languages.

513-514. *Business English.* This course endeavors to cover in a systematic way the principles embodied in the best modern letters and to show how their dual purpose is carried out, by means of a detailed treatment of each type of letter and the circumstances which each is to meet. This unit covers letters asking for, giving or refusing information, letters ordering goods, remittances and inclosures, acknowledgments, adjustments, recommendations, applications, invitations, congratulations, etc. The second unit takes up credit letters, collection letters, sales letters, form letters and filing of correspondence. There is no difference between Business English and good English, and the course will consist only in the application of good English to the needs of modern business. A good working knowledge of English composition is prerequisite to entering the course.

ILLUSTRATIVE MATERIAL FOR TEACHING AGRICULTURE.

Lantern slides, pictures, posters, economic collection of threshed and unthreshed grains, diseased specimens, noxious weeds and troublesome insects, to illustrate good farm practices, farm products, farm machinery, may be secured locally and from exhibitors at grain shows and fairs, land agencies, W. M. Welch Company, Central Scientific Company, Extension Departments of Agricultural Colleges, U. S. Department of Agriculture, Russell-Miller Company, Minneapolis; Quaker Oats Company, Avery Plow Company, International Harvester Company, Ward Natural History Company, Specialty Manufacturing Company, St. Paul; Seed Breeding Farms, Minister of Agriculture, Ottawa, Canada; Experiment Station, University of Wisconsin, Educational Division of Great Northern Railroad, St. Paul; Armour & Company, Swift & Company, Morris Packing Company, Chicago; U. S. Geological Survey, Granite & Limestone Quarries, Entomological Branch of Natural History Survey, Washington; Kaufman-Lattimer Company, Columbus, Ohio; Nursery Companies, Spray

Companies, Live Stock Breeders' Associations; DeLaval Separator Company, the Sharples Separator Company, Creamery Package Company.

PRACTICE TEACHING IN VOCATIONAL AGRICULTURE.

Practice Teaching is required of all students in the teacher training curriculum in agriculture. One-third of a year, or one term of three term hours, is required of all students enrolled in the Vocational Agriculture courses preparing to teach Vocational Agriculture in the high schools. Students in this practice teaching are sent by the college to several rural schools in the county in which Vocational Agriculture is being taught under the direction of teachers of Vocational Agriculture employed by the community and approved by the State Vocational Board. Students spend two days each week for one-third of a year doing practice teaching in these schools. All lesson plans and project outlines are worked out by the students in conference with the Professor of Agricultural Education and other professors of agriculture, and the student teachers' work is supervised by the Department of Vocational Agriculture in the college in co-operation with the Smith-Hughes teachers in these high schools and the county superintendent of schools. This practice teaching is carried on under perfectly natural conditions and no material change of plans will be necessary in changing from this work carried on by the student teacher in these rural communities when the student teacher goes out from the institution to find a position in the high schools in some other part of the State. The demonstration school on the campus is also used to advantage, because many of the children in attendance come in daily from outlying rural districts. The arrangement for practice teaching could not be better to meet the needs of the students enrolled in the Department of Teacher Training in Vocational Agricultural Education. Practically all of the students enrolled in the courses in Vocational Agricultural Education are mature and come from the best rural schools with years of farm and some teaching experience.

LIST OF HELPFUL AGENCIES FOR TEACHERS IN VOCATIONAL AGRICULTURE.

I. *National Officials and Agencies at Washington, D. C.:*

1. Bureau of Education.
2. Public Health Service
3. Federal Board for Vocational Education.
4. U. S. Senators and Congressmen.
5. Department of Agriculture.
 - (a) Bureaus whose reports are published in "Annual Reports" by the Department—Bureaus of Soils, Animal Industry, Plant Industry, Markets.
 - (b) States Relations Service (lists of texts and references, bulletins of U. S. D. A., classified, lantern slides, motion pictures, etc.)

- (c) Forest Service (loans slides, pictures and samples of woods).
- (d) Division of Publications (monthly list of publications).

II. *State Agencies:*

1. State Department of Agriculture, Austin, Texas.
2. State Livestock Sanitary Commission, Austin, Texas.
3. State Board for Vocational Education, Austin, Texas.
4. Sam Houston Normal Institute, Department of Agriculture.
5. Agricultural & Mechanical College, College Station, Texas.
6. State Livestock or Breeders' Associations (Consult Secretaries for National Associations for addresses, per list herein).
7. Department of Agricultural Extension, Agricultural & Mechanical College, College Station, Texas.

III. *County and Community Agencies:*

1. County Farm Bureau or Agricultural Agent.
2. Superintendent of Schools.
3. Parent-Teachers Associations or Mothers' Clubs.
4. Farmers' Clubs or breeders' organizations.
5. Commercial or "Boosters" clubs.
6. Newspapers.
7. Successful farmers or other citizens.
8. Dealers in agricultural supplies.
9. Representatives of other agricultural industries, ginnermen, creamerymen, etc.

IV *Commercial Agencies.*

1. International Harvester Company, Chicago, Ill.
2. Portland Cement Company, Chicago, Ill.
3. Swift & Company, Chicago, Ill.
4. Armour & Company, Chicago, Ill.
5. Wilson & Company, Chicago, Ill.
6. Corn Products Refining Company, New York City, N. Y.
7. Washburn-Crosby Company, Minneapolis, Minn.
8. Seedsmen and nursery companies of the State.
9. Livestock Breeders' Associations.
10. Fertilizer companies.

FARM AND HOME SURVEY.

The first step in any progressive movement is to survey the field in order to learn the conditions and needs upon which the progress is to be based. The following outline for a farm and home study has been carefully planned both from the standpoint of facility in getting the information and from the value of the results as may be shown through tabulation. Teachers will find the survey a good class project in Vocational Agriculture, and the results should be of inestimable value to the teacher in carrying on his work in Vocational Agriculture and rural leadership in the community:

I. *Location.*

County.....Village or center.....
Population.....School District.....

II. *The Farm.*

1. Acres.....
2. Operated by owner or tenant.....
3. Resources of the farm

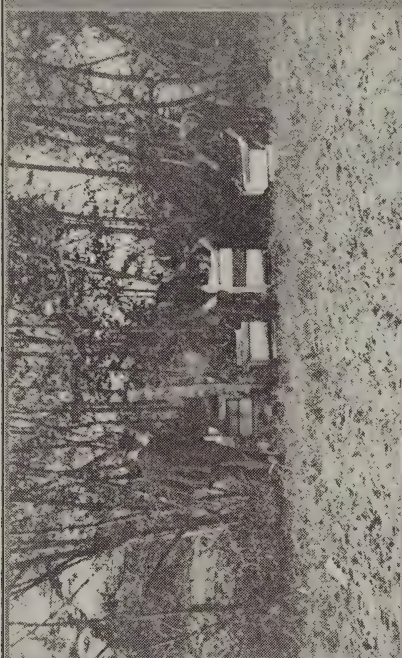
(a) Live Stock Survey.

	Horses	Beef Cattle	Dairy Cattle	Swine	Sheep	Poultry
Number on hand						
Male						
Female						
Altered						
Breed preferred						
Number females bred each year						

(b) Farm Crop Survey.

	No. of acres	Yields
Corn		bushels
Wheat		bushels
Oats		bushels
Cotton		bales
Clover		tons
Alfalfa		tons
Cane		tons
Pasture		
*Timber		
Sweet potatoes		bushels
Peanuts		bushels
Other farm crops		bushels

*Second growth or planted.



Judging Poultry.
Culling Poor Layers.

Beekeeping Activities.
Thoroughbreds on College Farm.

(c) Horticultural Survey.

	Amount			Condition
	*Young	†Prime bearing	§Old	
Tree fruits				
Apple, No. of trees				
Pear, No. of trees				
Plum, No. of trees				
Peaches, No. of trees				
Cherry, No. of trees				

*Young—Under bearing age.

†Prime bearing—Full fruitage age.

§Old—Age of declining fruitage.

Small fruits

Grapes, No. vines

Currants, bushes.

Gooseberries, bushes

Raspberries, dimensions of plot

Blackberries, dimensions of plot

Strawberries, dimensions of plot

Vegetables

Dimensions of garden.....

List vegetables grown.....

(d) Waste Land.

	Amount
Tillable land unused	
Undried or swamp	
Hilly or broken	

(e) Farm Business.

System of bookkeeping

Is good profit made annually?

(f) Fertilizers Used.

	Acres treated	Amount used
Lime stone		
Rock phosphate		
Other forms of phosphorus (state form used)		
Potassium (state form used)		
Mixed commercial fertilizer (state name)		

(g) Farm Equipment.

	Name	No.
Farm buildings		
Farm implements		
Farm conveyances		
Lots for feeding or trucking purposes		

III. *The Farm House.*

- (a) The Yard:
 Dimensions
 Measures for beautifying (check "x" those used).
 Shade trees
 Shrubs
 Vines
 Well-kept lawn
 Annual or perennial flowers.
- (b) The farm house (equipment):
 Stories....., Rooms.....
 Modern conveniences (check "x" those present and add others if necessary):
 Running water in, plumbing system
 Electric power and light
 Gas engine power
 Power driven washer, churn, separator, etc.
 Built-in furniture and features
 Pictures
 Musical instruments
 Library, number volumes.

IV. *The Family.*

- (a) Farm owner or tenant.....
 (b) Number years in community.....
 (c) Number years on this farm.....
 (d) Persons in family.....
 Father's age....., Birthplace.....
 Mother's age....., Birthplace.....
 Children.....
 1., Birthplace.....
 2., Birthplace.....
 3., Birthplace.....
 (e) Hired help, men....., Months in year.....
 women....., Months in year.....
 (f) Educational facilities:
 Members attending school, Number.....
 Nature of the school.....
 Number college graduates in family.....
 Number high school graduates in family.....
 Number eighth grade graduates in family.....
 Is public library used?.....

Are agriculture bulletins read in home?.....

List of newspapers and magazines in home.....

Are parents willing to have children study vocational subjects?.....

Does family welcome extension activities from schools?.....

(g) Social opportunities:

(1) Clubs or lodges to which members of family belong.....

(2) Agricultural or home improvement societies or organization
to which members of family belong.....

(3) Members of family who are leaders or officers of rural or-
ganizations.....

(4) List of community events shared in or attended during the
past year.....

(5) Recreational facilities—games, sports, etc.....

(h) Health conditions:

(1) Deaths in family....., Causes.....

(2) Diseases in family during past three years.....

(3) What is done to combat house flies.....

(4) Sources of water supply:

Dug wells.....

Driven wells.....

(5) How are waste and sewage disposed of?.....

(6) Ventilation in sleeping and living rooms.....

(7) Is patent medicine used?.....

If so, which ones most common?.....

(8) Any superstitions about health?.....

(i) Religious life:

(1) Church affiliation.....

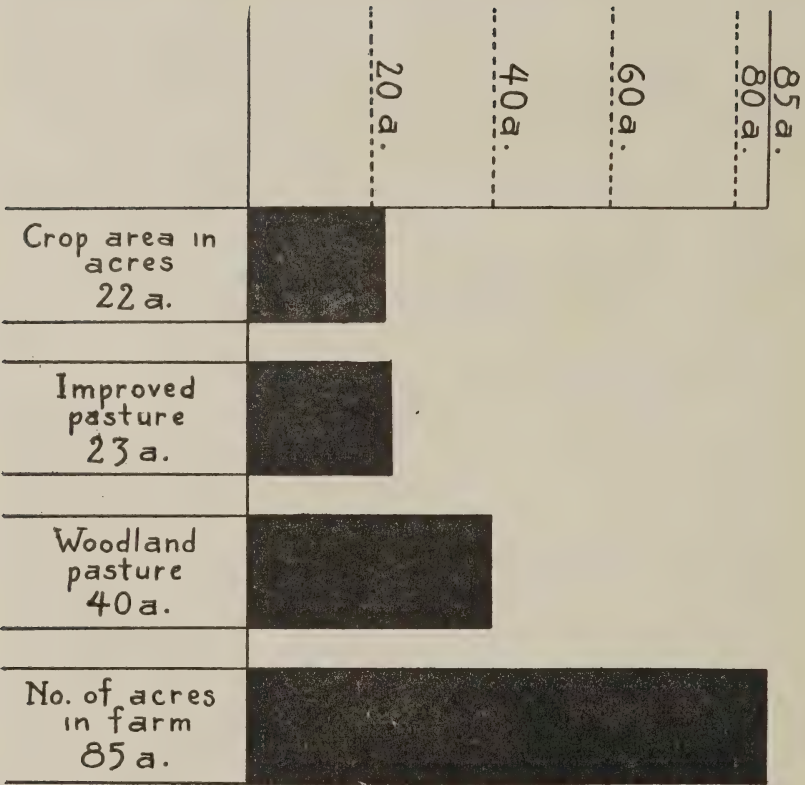
(2) Church preferred.....

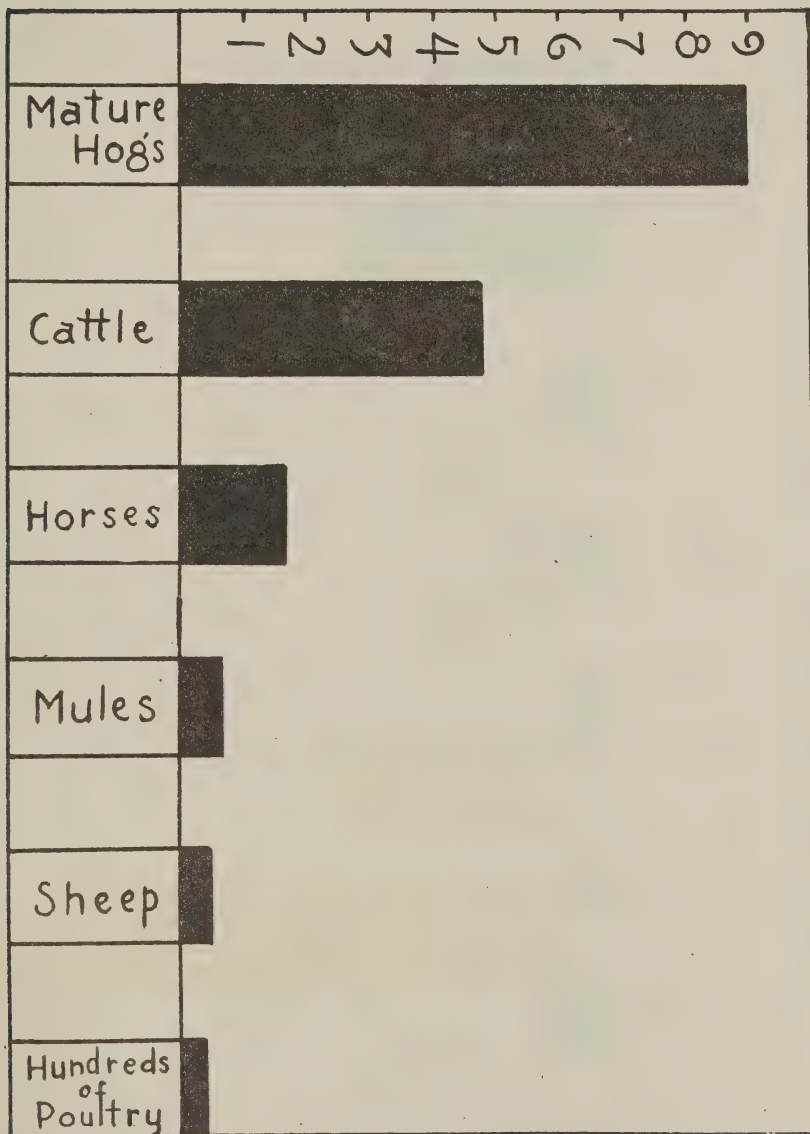
(3) Church attendance, regular or irregular.....

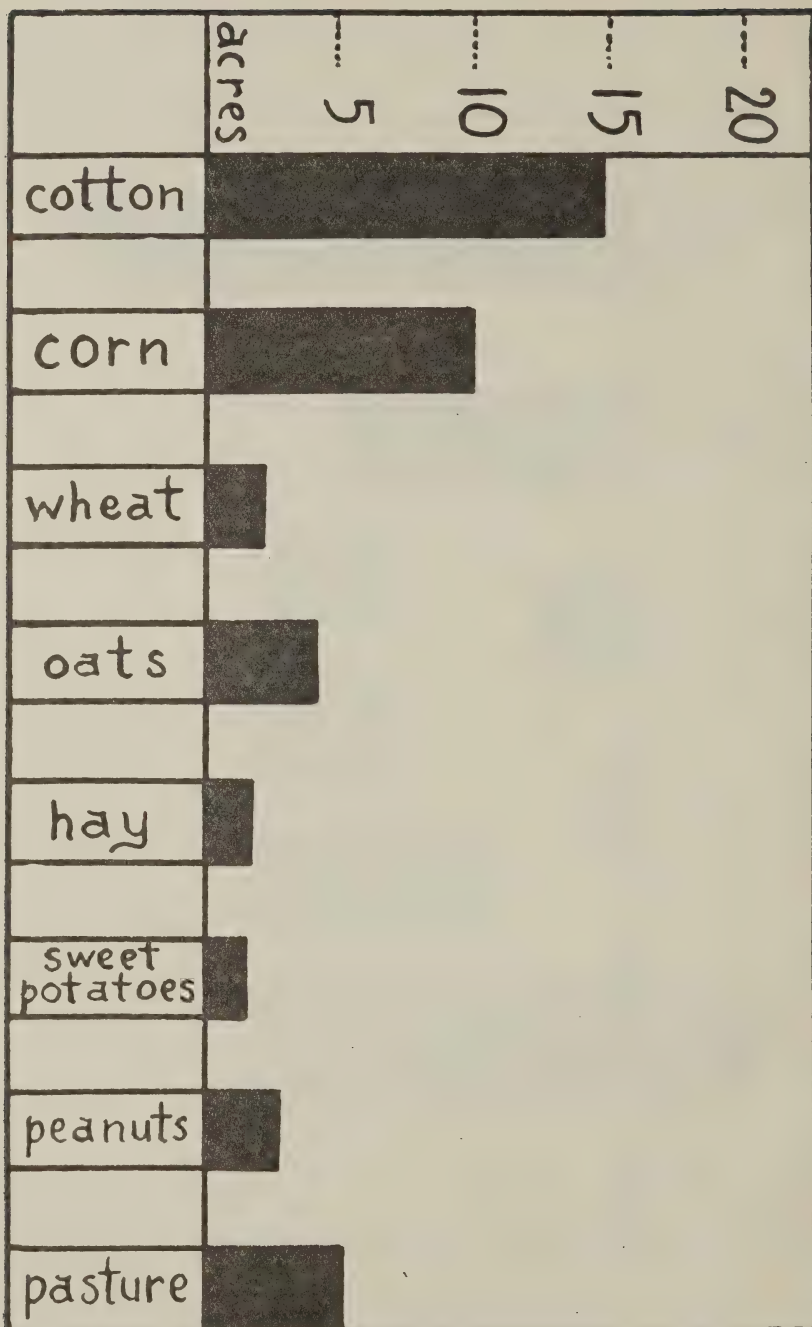
(4) Sunday school attendance, regular or irregular.....

(j) Is the family satisfied with country life?.....

Why?.....







COMMUNITY SERVICE.

While undoubtedly the teacher of Vocational Agriculture can render most valuable service to, and can most effectively gain and retain the sympathy and support of the community in which he is working by efficient classroom work, usually he can materially enhance the value of his services to the community and to his class by emphasizing some regular, systematic community activities. Work of this kind is not only beneficial to the community, but is also beneficial to the teacher and his department; for this is an excellent means of getting before the people of the neighborhood the function of the department of agriculture and also enables the teacher to gain an understanding of the needs and problems of the community, which he would not be able to secure in any other way, and which would be invaluable in the classroom work.

It is not possible to say specifically just what should be done in the way of community service as the problems of the various localities are not the same and the interests, experiences and training of the teachers are different. Just what should be undertaken in any particular community will depend upon the teacher and the needs of the community. (The teacher should be careful not to mistake his own interest and enthusiasm for community need.)

In one community land terracing might be the outstanding problem, in another drainage, in another pruning and spraying, in another marketing, in still another live stock improvement, and so on. It is suggested that the teacher of agriculture in his community service pick out one or two of the most outstanding community problems and one he is best able to handle, and work on these until their solutions are accomplished or are well under way. More effective results can be accomplished in this way than if the teacher dissipates his efforts by undertaking several of the larger community problems.

In all of his regular community activities the teacher of agriculture should have, as far as it is possible, some definite, carefully planned and constructive policy for his community service work.—Oklahoma Mechanical College Bulletin.

Suggestive Activities for the High School Department of Agriculture in the Community in Farm Management.

1. Plan cost account for farm crops.
2. Furnish statistics on various types of drainage.
3. Encourage keeping of live stock to utilize crop residues.
4. Make helpful suggestions concerning sites and locations for buildings.
5. Organize a system of accurate farm records.
6. Plan cost account of the dairy herds and aid in eliminating unprofitable members.
7. Save on purchase costs by organizing co-operative buying associations.
8. By having accurate records, determine the work units for various crops.
9. Put on good roads campaign to increase transportation facilities.

SOILS AND FERTILIZERS.

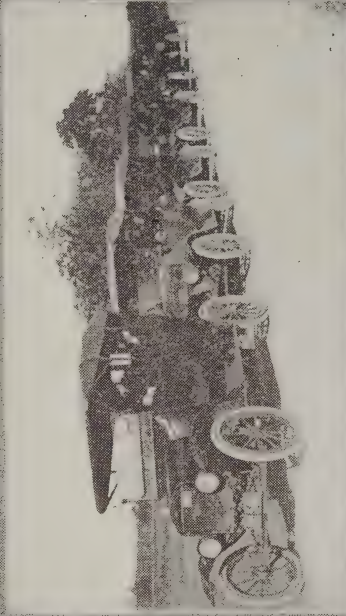
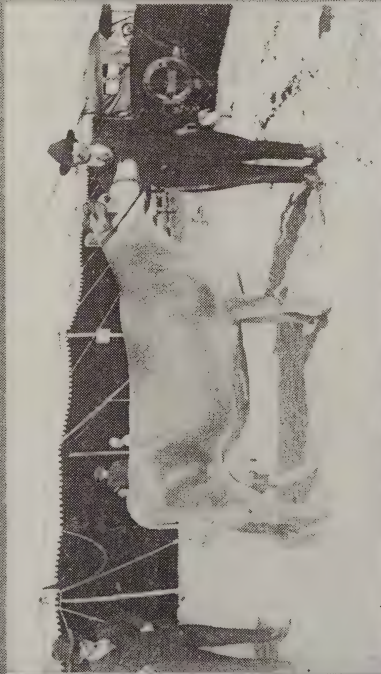
1. Have fertilizer test plots on various types of soil.
2. Encourage use of rotation, maintaining soil fertility.
3. Foster the use of green manures and cover-crops.
4. Calculate fertilizer formulas and encourage the home mixing of fertilizers.
5. Promote proper terracing and drainage to prevent washing.
6. Test soils for acidity and promote the use of lime where needed.
7. Impress the value of farm manure and how it should be kept.
8. Impress the importance of conserving soil water, and the water requirements of certain crops.
9. Teach the value and importance of legumes in soil building.

CONVENIENCES FOR THE HOME.

1. Lay out walks for the home.
2. Install system of waterworks.
3. Make stands for flower pots and portable flower boxes.
4. Make steps for house.
5. Make door and window screens.
6. Build a magazine rack.
7. Make a medicine chest.
8. Make a folding table.

HOME IMPROVEMENT.

1. Use charts, slides and motion pictures.
2. Teach how to care for lawn.
3. Teach how and where to plant flower beds.
4. Order seeds for home and schools.
5. Trim, prune and plant shrubs.
6. Build screen houses.



Scoring Hogs and Cows.

Scoring Cows.
Students on way to Houston Fair.

SANITARY IMPROVEMENT.

1. Proper drainage of school lands.
2. Build sanitary closets.
3. Aid in sanitary care of milk.
4. Make wells for drinking purposes sanitary.
5. Use slides and charts on combating flies and mosquitoes.
6. Keep oil on pools of standing water.
7. Destroy breeding places for flies and mosquitoes.
8. Make septic tanks.

ORCHARD IMPROVEMENT.

1. Prune trees.
2. Set out small orchards around the home.
3. Order trees from nurseries and prepare them for planting.
4. Graft fruit trees.
5. Locate orchards for the farmers.
6. Use slides for encouraging the renovation of orchards.
7. Introduce new trees suitable to that section of the country.
8. Spray trees for farmers.
9. Estimate the percentage of increase in production of fruit after spraying.
10. Exhibit orchard products at fairs.

LIVE STOCK IMPROVEMENT.

1. Judge live stock of the community.
2. Raise purebred live stock in the project work.
3. Organize clubs.
4. Test milk and cream for the farmers.
5. Make balanced rations for the farmers.
6. Conduct school fairs in the community.
7. Aid in tick eradication.
8. Use charts and slides to encourage improvement of live stock.
9. Inoculate against diseases.
10. Demonstrate through feeding the value of good live stock.
11. Make spray to keep off flies.
12. Encourage co-operative bull associations.
13. Encourage co-operative cow testing associations.
14. Figure cost of various rations.

FOREST CONSERVATION.

1. Plant trees.
2. Look after storm-damaged trees.
3. Use slides and motion pictures from U. S. D. A.
4. Get charts.
5. Encourage establishing quick-growing and self-perpetuating trees.
6. Conserve young trees when moving larger ones.
7. Conserve young trees when moving larger ones.

FARM MARKETING.

1. Grade eggs.
2. Sell eggs through co-operation.
3. Co-operate in selling and grading potatoes.
4. Introduce best crates and baskets for shipping.
5. Grade cotton.
6. Standardize community brands of produce.

INCREASING INTEREST IN READING.

1. Make school libraries accessible to patrons.
2. Have children take periodicals home from school.
3. Organize literary societies at school and have the patrons take part in the programs.
4. Have the children point out the valuable helps to be gotten from the papers.
5. Get club rates for school libraries.
6. After stimulating interest in any line follow it up with good literature.
7. Conduct community farm reading courses.
8. Use the son's project as a means of stimulating a wholesome desire on the part of the father for more scientific knowledge.
9. Try to interest each farmer in the community in one or more specific phases of agriculture and furnish literature on that subject.

FARM SHOP WORK.

Make equipment, for example :

1. Farm gate
2. Chicken brooder, coop and pen
3. Step-ladder
4. Wagon-jack
5. Swine trough
6. Eveners and singletrees
7. Road drags
8. Well curb
9. Concrete walks
10. Concrete watering trough
11. Concrete fence posts
12. Concrete steps
13. Granary floors
14. Lawn roller
15. Building blocks.
16. Septic tank
17. Flower pots.

SUGGESTIONS AS TO DISTRIBUTION OF BULLETINS.

Frequently the teacher in the Department of Vocational Agriculture in the high school will find in his regular work through the year, and in the arrangement of special programs and short courses, that the farmers and other citizens of the community would like to have bulletins which are sent out by the Congressmen. In such event the teacher will find Congressmen ready to furnish him with large quantities of his allotment of bulletins, and also franked envelopes for mailing these out in the community. Bulletins distributed through the school as a center by the Congressmen are mailed at a time when the subject discussed in the bulletin is of greatest local interest to the farmer, and through this co-operation of the Congressmen and the teacher of Vocational Agriculture a much greater number of bulletins are distributed to advantage to the farmers of the community. The teacher of agriculture who has made a farm survey will know the special farm activities on which each farmer desires information.

PROGRAM CLINES PRAIRIE SCHOOL FAIR & FARMERS'
SHORT COURSE. NOVEMBER 21-22, 1919.

A SMITH-HUGHES AGRICULTURAL SCHOOL

Friday, 9:30 a. m. Opening exercises.

Song, America.

Welcome address—J. L. Lester.

Response—Prof. S. C. Wilson.

Address, "A Cropping System for East Texas"—S. C. Wilson.

Address, "Farmers' Exchanges and Marketing Systems"—
William C. O'Donnell.

Steam Pressure Cooking Demonstration—Mrs. E. L. Carroll.

Noon, 12:00 to 1:30.

1:30 p. m.—Fall Breaking, The Seed Bed—R. H. Jones.

Address—Representative of Educational Department, A. & M.
College.

Cottage Cheese Demonstration—Mrs. E. L. Carroll.

Tractor Demonstrations.

Basket Ball Games

7:30 p. m.

Address, "The Work and Benefits of Rural Organization"—
H. L. McKnight, A. & M. College.

Address, "Educating the Boy for Service"—Joseph Roemer.
Picture Show.

Saturday, 9:30 a. m. Opening Exercises.

Address, "The Need of Better Live Stock in Walker County.
How to Get Them."

Address, "Building a School System"—Supt. J. C. Thomas.

Address, "Vocational Agriculture"—J. D. Blackwell.

Yeast Bread Demonstration—Mrs. E. L. Carroll.

Tractor Demonstrations.

Noon, 12:00 to 1:30.

1:30 p. m.—Judging the exhibits.

Peanut Butter Demonstration—Mrs. E. L. Carroll.
 Peanuts as a Food and Feed Crop—R. H. Jones.
 Basket Ball Games.

PREMIUM LIST CLINES PRAIRIE SCHOOL FAIR.

The teachers of the school and some citizens of the community and other citizens of the county have given a dollar or more each to a premium fund. Others will give.

A premium in cash or ribbons will be awarded for the following:

- Best 10 ears of white corn.
- Best 10 ears of yellow corn.
- Best 10 ears of prolific corn.
- Best 10 ears of popcorn.
- Best peck of No. 1 sweet potatoes.
- Best peck of largest sweet potatoes.
- Best bunch of Spanish peanuts.
- Best peck of Spanish peanuts.
- Best display of peas and beans.
- Best 5 stalks of ribbon cane.
- Best quart of ribbon cane syrup.
- Largest pumpkin, largest kershaw.

- Best sow and litter of pigs.
- Best boar, any age.
- Best gilt under 6 months of age.
- Best fat barrow.
- Best dairy cow.
- Best beef type cow.
- Best dairy herd bull.
- Best beef type bull.
- Best dual purpose mare.
- Best dual purpose gelding.
- Best colt under 1 year of age.
- Best pair of chickens.
- Best pullet.
- Best cockerel.

Best and largest farm implement display.

- Best and largest display canned fruits and vegetables.
- Best jar of preserves.
- Best jar of fresh vegetables.
- Best jar of canned fruit.
- Best jar of jelly.
- Best jar of pickles or relish.
- Best loaf of bread.
- Best plain sewing.
- Best embroidery.
- Best tatting.
- Best crochet.

In the above school in co-operation with the principal and superintendent students in Vocational Agriculture in Sam Houston Normal College do practice teaching.

AGRICULTURE CORRELATED.

With	Gives	Receives
Reading	Subject matter for practice	Agricultural information
Geography	Local application	Information as to markets, lines of trade, competing territory
History	Life interest, local development	Accounts of Agricultural development
Language	Interesting subject matter	Forms for reports, letters, tabulations
Arithmetic	Community problems	Solution of project problems, interpretation of records
Drawing	Suitable and interesting subjects	Plans, illustrations, booklets, charts
Manual arts	Rational problems	Equipment for school and home use

International Harvester Co.

SUGGESTIVE SCORE CARD FOR JUDGING SUCCESS OR
FAILURE OF PUPILS IN HOME PROJECT.
PRODUCTION SCORE CARD.

A. Plan.	
1 Initiative, 2 aim, 3 accuracy.....	16
B. Records.	
1 Completeness, 2 neatness, 3 accuracy.....	13
C. Efficiency in Performance.	
1 Judgment, 2 system, 3 punctuality, 4 use of time.....	19
D. Economic Income.	
1 Total net percentage of profit.....	10
E. Skill.	
1 Skill developed, 2 facility in performance.....	12
F. Knowledge.	
1 New subject matter, 2 social implication, 3 related knowledge.....	15
G. Attitude.	
1 Interest in work, 2 evidence of co-operation, 3 interest in science.....	15
	100

SUGGESTED SCORE CARD FOR MARKETING
PRODUCTS FROM PROJECTS.

I. Judgment exercised in selection of marketable type, breed, or variety.....	12%
1. Condition	
a. Maturity or fitness	
b. Soundness	
c. Appearance	
II Grading or sorting.....	14%
1. Size	
2. Quality	

III.	Packing, crating or loading for shipment or sale.....	11%
	1. Preparation	
	2. Honesty	
IV.	Careful handling after packing or crating.....	10%
	1. Storing or holding	
	2. Delivery	
V.	Salesmanship.....	21%
	1. Choice of market	
	2. Judgment as to when to sell	
	3. Judgment as to how to sell	
	4. Publicity	
	5. Completeness of sale of produce	
	6. Holding trade	
VI.	Economy in marketing.....	15%
	1. Labor	
	2. Co-operation	
	3. Judgment in purchase of containers, etc.	
VII.	Business skill developed.....	17%
	1. Execution	
	2. Attitude and tact	
	3. Records of sales	
	4. Knowledge of general marketing systems.	
		100%

HELPFUL REFERENCES.

Supervised Study.

- Hall-Quest, A. L., Direction of Study. The Modern High School by Johnston and others. Scribners.
- The Aim of Supervised Study. Virginia Journal of Education, 1915, pp. 537-540.
- Supervised Study. Virginia Journal of Education, 1915, pp. 181-184.
- Comments of Schoolmen on Supervised Study. Virginia Journal of Education, 1915, pp. 344-347.
- Some Reasons for and Results of Supervised Study. Virginia Journal of Education, 1915, p. 287, ff.
- Individual vs. Class Introduction. School Review, Vol. XIV, pp. 635-640.
- Jones, Olive M., Teaching Children to Study. Education XXX, pp. 242-244. December, 1909.
- McMurry, F., Improvements of the Study Period. N. E. A., 1906, pp. 102-108.

The Project Method in Education.

- The Project Method in Education—Brown—Pub. by R. G. Badger, Boston.
- Project Teaching, C. A. McMurry, Nashville, Tenn.
- S. H. Dennis, The Home Project in Secondary School Agriculture, National Educational Association, 1916, pp. 622-626.
- William H. Kilpatrick. The Project Method. Teachers' College Record, XIX, pp. 319-325, Sept., 1918.

- David Snedden. The Project as a Teaching Unit. School and Society, IV, pp. 419-423, Sept. 16, 1918.
- John F. Woodhull, The Project Method in the Teaching of Science. School and Society, VIII, pp. 41-44, July 13, 1918.
- E. A. Funkhouser. Projects in Farm Mechanics. (John Tarleton Agricultural College, Stephenville, Texas.)
- Home Project as a Phase of Vocational Education, Bulletin No. 21. (Federal Board for Vocational Education.)
- L. L. Jackson. Project Sinning and Sinned Against. Industrial Arts Magazine, VII, pp. 138-139, April, 1918.
- The Massachusetts Home Project Plan of Vocational Agricultural Education, R. W. Stimson (U. S. Bur. Ed. Bul., 1914, No. 8 (Whole No. 579), pp. 104, pls. 6).
- Plans and Records of Home Project Instruction, L. S. Hawkins (Nat. Soc. Prom. Indus. Ed. Bul. 22 (1916), pp. 312-324).
- Home Projects in Secondary Courses in Agriculture, H. P. Barrows (U. S. Dept. Agr. Bull. 346 (1916) p. 20).
- School Credit for Home Practice in Agriculture, F. E. Heald (U. S. Dept. Agr. Bul. 385 (1916), p. 27).

Farm Journals.

- Breeders' Gazette—Sanders Pub. Co., Chicago. Weekly, \$1.50 per year. Devoted to stock raising in the United States.
- Hoard's Dairyman—W. D. Hoard & Sons, Pub., Fort Atkinson, Wis., \$1.00 per year. Dairy industry in the United States.
- Country Gentleman—Curtis Publishing Co., Philadelphia, Pa. Weekly, \$1.00 per year. General; peculiarly adapted to intensive farming; good editorials.
- Everybody's Poultry Magazine—Everybody's Poultry Magazine Publishing Co., Hanover, Pa. Monthly, \$1.00 per year. Poultry raising.
- The Swine World—Jas. P. Doty Co., Chicago. Semi-monthly, \$1.00 per year. Swine industry in the United States. Large number of advertisements.
- Progressive Farmer, Dallas, Texas.
- Texas Farm & Ranch, Dallas, Texas.
- Dallas-Galveston Farm News, Dallas-Galveston, Texas.
- Texas Bee Keepers' Journal, New Braunfels, Texas.

LIST OF IMPLEMENT COMPANIES WITH ADDRESSES.

1. Texas Implement & Manufacturing Co., McGregor, Texas. Plows, choppers and planters.
2. The Cole Mfg. Co., Charlotte, N. C. Plows, planters and distributors.
3. Southern Plow Co., Dallas, Texas. Plows, planters and cultivators.
4. International Harvester Co., Chicago, Ill. Plows, planters, manure spreaders, cultivators.
5. Bates Machinery and Tractor Co., Dallas, Texas.
6. The Holden Company, Inc., Peoria, Ill. Lime and fertilizer distributors.

7. A. J. Kirstin Co., Escanaba, Mich. Stump pullers.
8. Owensboro Ditcher and Grader Co., Box 931, Owensboro, Ky.
Graders and ditchers.
9. John Deere Plow Co., Moline, Ill.
10. Niagara Sprayer Co., Middleport, N. Y., or Fort Valley, Ga.
11. Twin City Co., Houston, Texas. Tractors.
12. Lanham Cotton Cultivator Co., Houston, Texas.
13. K. C. Hay Press Co., Kansas City, Mo.
14. Southern Rock Island Plow Co., Dallas, Texas.
15. Dan H. Nash, Inc., Millington, N. J.
16. Liebers' Farm Equipment Co., Lincoln, Neb.
Corsicana Terracing and Ditching Machine.
17. Avery Company of Texas, Dallas, Texas. Plows, tractors, cultivators, etc.
18. Emerson-Brantingham Implement Co., Dallas, Texas. Plows, listers, cultivators, harrows.
19. Kibbe Tractor & Implement Co., Dallas, Texas.
20. Moline Plow Co., Dallas, Texas.
21. J. I. Case Threshing Machine Co., Racine, Wis.
22. Parlin-Orendorff Implement Co., Dallas, Texas. Plows, manure spreaders, rakes, harrows, etc.
23. DeLaval Separator Co., Chicago, Ill.
24. Sharples Separator Co., West Chester, Pa.
25. Kelley Plow Co., Longview, Texas.

LIST OF BREEDERS' ASSOCIATIONS.

Excellent pictures and pamphlets may be obtained from some of these associations.

Beef Cattle:

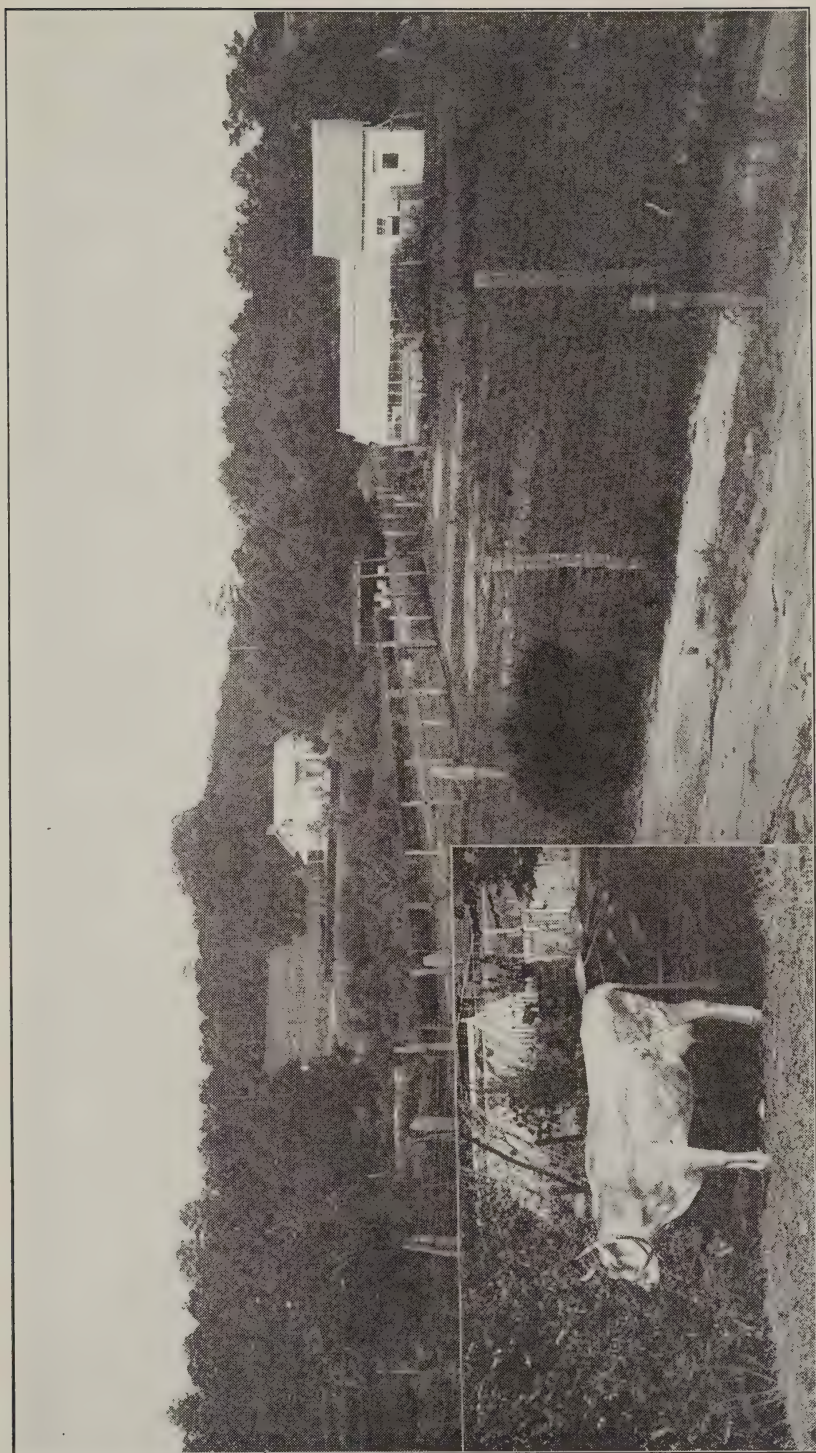
- Am. Aberdeen Angus Breeders' Assn., Chas. Gray, Chicago.
- Am. Galloway Breeders' Assn., R. W. Brown, Carrollton, Mo.
- Am. Hereford Cattle Breeders' Assn., H. J. Kinzer, Kansas City, Mo.
- Am. Polled Hereford Breeders' Assn., B. O. Gammon, Des Moines, Iowa.
- Am. Polled Durham Breeders' Assn., Frank W. Harding, Chicago.

Dairy Cattle:

- Ayrshire Breeders' Assn., C. W. Winslow, Brandon, Vt.
- Brown Swiss Cattle Breeders' Assn., Ira Inman, Beloit, Wis.
- Dutch Belted Cattle Assn. of Am., E. J. Kirby, Covert, Mich.
- Am. Guernsey Cattle Club, Wm. H. Caldwell, Peterboro, N. H.
- Holstein-Friesian Assn. of Am., F. L. Houghton, Brattleboro, Vt.
- Am. Jersey Cattle Club, R. M. Gow, New York City.

Dual Purpose Cattle:

- Am. Devon Breeders' Assn., L. P. Sisson, Newark, Ohio.
- Milking Shorthorn Cattle Club, C. B. Wade, Orangeville, Ohio.
- Red Polled Cattle Club of Am., H. A. Martin, Gotham, Wis.



College Farm Views.

Horses:

- Am. Assn. of Importers & Breeders of Belgian Draft Horses, J. D. Conner, Jr., Wabash, Ind.
 Cleveland Bay Society, R. P. Stenicker, Orange, N. J.
 French Coach Society, Duncan E. Willett, Oak Park, Ill.
 German Hanoverian & Oldenburg Coach Horse Assn., J. Crouch, LaFayette, Ind.
 Am. Clydesdale Assn., R. B. Ogilvie, Chicago.
 Nat. French Draft Horse Assn., C. E. Stubbs, Fairfield, Iowa.
 The Morgan Horse Club, C. C. Stillman, New York City.
 Percheron Society of Am., Wayne Dinsmore, Chicago.
 Am. Shetland Pony Club, Julia M. Wade, LaFayette, Ind.
 Am. Shire Horse Assn., Chas. Burgess, Sr., Wenona, Ill.
 Am. Suffolk Horse Assn., A. Graham Galbraith, DeKalb, Ill.
 Thoroughbred or Am. Stud Book, W. H. Rowe, New York City.
 Am. Trotting Register, W. H. Knight, Chicago.
 Welsh Pony & Cob Soc. of Am., Julia M. Wade, LaFayette, Ind.
 Am. Breeders' Assn. of Jacks & Jennets, J. W. Jones, Columbia, Tenn.
 Standard Jack & Jennet Registry of Am., Wm. E. Morton, Kansas City, Mo.

Sheep:

- Am. Cheviot Sheep Society, F. E. Dawley, Fayetteville, N. Y.
 Am. Cotswold Sheep Assn., F. W. Harding, Waukesha, Wis.
 Continental Dorset Club, Edith Chichester, Mechanicsburg, Ohio.
 Am. Hampshire Down Sheep Assn., Comfort A. Tyler, Coldwater, Mich.
 Am. Leicester Breeders' Assn., A. J. Temple, Cameron, Ill.
 Nat. Lincoln Sheep Breeders' Assn., Bert Smith, Sherlock, Mich.
 Am. Delaine Merino Record Assn., Beulah M. McDowell, Canton, Ohio.
 Delaine Merino Record Assn., J. B. Johnson, Cannonsburg, Pa.
 German Merino Assn., E. N. Ball, Ann Arbor, Mich.
 Spanish Merino Assn., Wesley Bishop, Delaware, Ohio.
 Am. Oxford Down Record Assn., W. A. Shafer, Hamilton, Ohio.
 Am. Rambouillet Sheep Breeders' Assn., Dwight Lincoln, Milford Center, Ohio.
 Internat. VonHomier Rambouillet Club, E. N. Ball, Ann Arbor, Mich.
 Am. Shropshire Registry Assn., Julia M. Wade, LaFayette, Ind.
 Am. Southdown Breeders' Assn., Frank S. Springer, Springfield, Ill.

Swine:

- Am. Berkshire Breeders' Assn., F. S. Springer, Springfield, Ill.
 Chester White Swine Record Assn., F. F. Moore, Rochester, Ind.
 Ohio Improved Chester White Swine Breeders' Assn., O. C. Vernon, Goshen, Ind.
 Am. Duroc-Jersey Swine Breeders' Assn., R. J. Evans, Chicago.
 Nat. Duroc-Jersey Record Assn., J. R. Pfander, Peoria, Ill.

Am. Hampshire Swine Record Assn., E. C. Stone, Peoria, Ill.
 Am. Mule Foot Hog Record Assn., R. E. Pfeiffer, Columbus, Ohio.
 Am. Poland China Record Assn., W. W. McFadden, Chicago.
 Nat. Poland China Record Co., A. M. Brown, Winchester, Ind.
 S. W. Poland China Record Assn., H. P. Wilson, Gadsen, Tenn.
 Am. Tamsworth Swine Record Assn., E. N. Ball, Hamburg, Mich.
 Am. Yorkshire Club, Harry G. Krum, White Bear Lake, Minn.

LANTERN SLIDES ON AGRICULTURAL AND RELATED SUBJECTS.

Slides may be borrowed or purchased from the following companies:

The International Harvester Company, Chicago—Sets of slides and lecture notes; fourteen subjects, such as corn, alfalfa, a fertile soil, dairying, obnoxious weeds, house flies and farm poultry.
 The Portland Cement Company, Chicago—Slides on silo and other cement construction projects.
 The National Cash Register Company, Dayton, Ohio—Slides on school and landscape gardening.
 Soil Improvement Committee, National Fertilizer Co., Chicago.
 The College of Agriculture—Slides on dairying. Address Dairy Department, Texas A. & M.

Lantern slides may be rented or borrowed from the following companies:

Badger Stereopticon Co., Congress Park, Ill.
 Keystone View Co., Meadville, Pa.
 Underwood & Underwood, New York, N. Y.
 Wilson & Co., Chicago.
 Williams, Brown & Earle, Inc., Philadelphia, Pa.
 Ryerson Library, Art Institute, Chicago.

Lantern slides and stereopticons may be purchased from the following companies:

Bausch & Lomb Optical Co., 507 St. Paul St., Rochester, N. Y. Stereopticons and equipment.
 Chas. Beseler Co., 131-133 East 23d St., New York City. Stereopticons and slides.
 Alvin E. Cheney, Granville, Ohio. Lantern slides.
 Detroit Publishing Co., Detroit, Mich. Lantern slides.
 Underwood & Underwood, 417 Fifth Ave., New York City. Stereopticons and slides.
 H. C. White Co., North Bennington, Vt. Stereopticons and slides.
 Badger Stereopticons Co., Congress Park, Ill. Stereopticons and slides.
 Harriman-Decker Co., Chicago. Stereopticons and slides.
 McIntosh Stereopticon Co., Chicago. Stereopticons and slides.
 Spencer Lens Co. Stereopticons.
 Victor Animatograph Co., Davenport, Iowa. Stereopticons and slides.
 American Poultry Association, Fort Wayne, Ind. Slides.
 Argus Motion Picture Co., Cleveland, Ohio. Slides.

Conrad View Co., Chicago. Slides.
 Keystone View Co., Meadville, Pa.
 National Assn. of Audubon Societies, Broadway, New York. Slides.
 Mrs. M. V. Singerland, Ithaca, N. Y. Slides.
 Chicago Apparatus Co., 32-40 S. Clinton St., Chicago.
 Kny-Scherer Co., 410 W. 27th St., New York City.
 Ward's Natural Science Establishment, Rochester, N. Y.
 J. Horace McFarland Co., Harrisburg, Pa. Slides on landscape gardening and horticulture.
 Chicago Biological Supply House, Chicago.
 Cambridge Botanical Supply Co., Cambridge, Mass.
 Educational Exhibition Co., 26 Custom House St., Providence, R. I. Stereopticons.
 Williams, Brown & Earle, Philadelphia, Pa. Stereopticons and slides.
 Central Scientific Co., Chicago. Stereopticons and slides.
 W. M. Welch Company, 1516 Orleans St., Chicago. Stereopticons and slides.

DEALERS IN AGRICULTURAL AND SCIENTIFIC APPARATUS AND SUPPLIES.

American Entomological Co., Brooklyn, N. Y. Biological and botanical supplies.
 Baker, F. M. Apparatus Co., 214 E. Onondaga St., Syracuse, N. Y. General laboratory supplies.
 Cambridge Botanical Supply Co., Cambridge, Mass. Botanical, agricultural and biological supplies.
 Central Scientific Co., 460 East Ohio St., Chicago, Ill.
 Chicago Apparatus Co., 32-40 S. Clinton St., Chicago.
 Chicago Biological Supply House, 5505 Kimbark Ave., Chicago.
 Eimer & Amend, 205-211 Third Ave., New York City. Chemical laboratory supplies.
 Federal Equipment Co., 322-342 West St., Carlisle, Pa. For physics and chemistry laboratories; domestic science, biology, manual training.
 Gaertner & Co., Wm., 5345-50 Lake Park Ave., Chicago. Physical apparatus and laboratory supplies.
 Kauffman-Latimer Co., Columbus, Ohio. General laboratory supplies.
 Kewanee Mfg. Co., 70 Fifth Ave., New York City. Electrical laboratory equipment.
 Knott Apparatus Co., Ames and Amherst Sts., Boston, Mass. Chemical, physical and biological supplies.
 Kny-Scherer Co., 404-410 W. 27th St., New York City. Physical, chemical and general laboratory supplies.
 New Jersey Entomological Co., Newark, N. J. Botanical and biological supplies.
 Robbins, A. L., Chicago. Physical, chemical and general supplies.
 Stoelting, C. H. & Co., 3037-3047 Carroll Ave., Chicago. Scientific apparatus and laboratory supplies.
 Ward's Natural Science Establishment, Rochester, N. Y. General supplies, charts, specimens, etc.
 Welch, Wm. M. Scientific Co., 1516 Orleans St., Chicago. Phys-

ical, chemical and general supplies.
 Western Electric Co., 45 Weston Avenue, Newark, N. J. Scientific apparatus department; general supply department.

CHARTS, MAPS AND POSTERS ON AGRICULTURAL
 AND RELATED SUBJECTS.

Wm. Cooper & Nephews, 64 W. Illinois St., Chicago. Breeds of sheep.

Journal of Veterinary Science, Chicago. Veterinary charts.
 Crop Improvement Committee, Board of Trade, Chicago. Corn test charts.

Kauffman-Latimer Co., Columbus, Ohio. Bricker charts.

Supt. of Documents, Washington, D. C. Langworthy charts.

Imperial Chemical Co., Grand Rapids, Mich. Insect charts.

Minister of Agriculture, Ottawa, Can. Charts on potato diseases.

A. W. Mumford, Pub., Chicago. Bird and nature charts.

Kentucky Tobacco Product Co., Louisville, Ky. Insect chart.

Wisconsin Geological Survey, Madison, Wis. Soil maps.

E. C. Brown, 851 Maple St., New York City. Spray calendar.

Washburn-Crosby, Minneapolis, Minn. Flour mill and wheat kernel.

International Harvester Co., Chicago. Good agricultural charts.

Wilson & Co., Chicago. Cuts of beef.

Campbell-Udell Chemical Co., Grand Rapids, Mich.

Alabama Polytechnic Institute, Auburn, Ala. Vegetable planting and spray charts.

Outline maps and portable blackboards:

Atkinson Mentzer Co., Chicago.

A. J. Nystrom, Chicago.

Northwestern School Supply Co., Minneapolis, Minn.

Rand & McNally Co., Chicago.

Home Made Charts:

Charts may be made in the laboratory by the teacher and students by the use of stencils and drawing crayons. The cloth for use in making charts should be heavy sheeting of convenient width. Rubber type of from one inch to one and one-half inch in size may be obtained from A. Flanagan & Co., or Wm. M. Welch Co., Chicago; Salisbury, Schultz Co., Chicago, and Martin & Co., South Clark Street, Chicago. The charts may be of any convenient size.

Stencils for chart making may be obtained from the International Harvester Co., Chicago. Gummed letters may be obtained from Tablet & Ticket Co., Chicago, and from Denison Manufacturing Co., New York City.

Large outlines of animals may be sketched on similar cloth and used in teaching parts of animals. Drawings or stencils of the grain flowers may also be made for teaching parts of flowers.

Posters:

Agricultural Experiment Station, University of Wisconsin:

- Poster Bulletin No. 1.—Potato Diseases.
Poster Bulletin No. 2.—Standard Potatoes.
Poster Bulletin No. 3.—Prevention and Control of Hog Cholera.
Poster Bulletin No. 4.—How Do You Market Your Crops?
Poster Bulletin No. 5.—Help Fight These Weeds.
Poster Bulletin No. 6.—Improved Sandy Soils.
Poster Bulletin No. 7.—Test Your Seed Corn.
Poster Bulletin No. 8.—Save Farm Fertility.
Poster Bulletin No. 9.—Keep Cream and Milk Clean and Cold.
- U. S. Department of Agriculture:
Destroy the common barberry.
Fight wheat rust.
Spray potato fields.
Starve the Hessian fly.

Publishing Houses:

- American Bee Journal, Hamilton, Ill.
American Book Co., New York.
American Journal of Medicine, Chicago.
D. Appleton Co., 443-495 Broadway, New York.
Richard G. Badger, The Gorham Press, Boston, Mass.
J. T. Bigwood, States' Printer, Jersey City.
P. Blakiston & Sons, 1012 Walnut St., Philadelphia.
Bobbs, Merrill Co., Indianapolis, Ind.
Breeders' Gazette, Chicago.
Cambridge University Press, Cambridge, Mass.
The Century Co., New York.
Doubleday, Page & Co., Garden City, N. Y.
E. P. Dutton Co., New York City.
Federal Publishing Co., Indianapolis, Ind.
Frost Publishing Co., 537 S. Dearborn, Chicago.
Ginn & Co., New York City.
D. C. Heath, New York City.
Holstein-Friesian Register, Brattleboro, Vt.
Houghton, Mifflin Co., Boston, Mass.
Hurst, Blackett, Limited, London.
Iowa Geological Survey, Ames, Iowa.
F. D. Kimball Co., Waterloo, Iowa.
Lea & Febiger, New York City.
J. B. Lippincott, Philadelphia, Pa.
Longmans, Green & Co., New York City.
Lord Baltimore Press, The Friedenwald Co., Baltimore, Md.
Lyons & Carnahan, Chicago.
MacMillan Co., Chicago.
McGraw-Hill Book Co., New York City.
Mendota Book Co., Madison, Wis.
Orange-Judd Co., Chicago.
Rand-McNally Co., Chicago.
A. I. Root Co., Medina, Ohio.
Row, Peterson Co., 623 S. Wabash, Chicago.
Benj. Sanborn & Co., Chicago.
Sanders Publishing Co., Chicago.

W. B. Saunders Co., Philadelphia, Pa.
Chas. Scribners' Sons, New York City.
Sturgis & Walton Co., New York City.
U. S. Department of Agriculture, Washington, D. C.
Vinton & Co., London.
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